HTC-D159

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

HTC-D159 is the compact disc deck in LBT-A17CDM /D159CD/D220CD.

SPECIFICATIONS

Cassette deck

Recording system	4-track 2-channel stereo
Frequency response	DOLBY NR OFF With Type II cassette (Sony UX-S) 40 Hz to 14 kHz (±3 dB) With Type I cassette (Sony HF-S) 40 Hz to 13 kHz (±3 dB)
Wow and flutter	W.PEAK ±0.2% (DIN)

Compact disc player

Laser	Semiconductor laser (λ = 780 nm)
Laser output	Max. 44.6 μW* * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Frequency response	2 Hz to 20 kHz ± 0.5 dB
Signal-to-noise ratio	More than 93 dB
Dynamic range	More than 90 dB
Harmonic distortion	Less than 0.008% (1 kHz)
Channel separation	More than 90 dB (1 kHz)

General

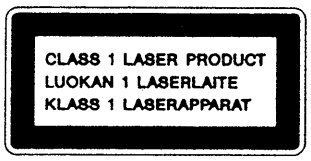
Mass	Approx. 6.2 kg
Dimensions	Approx. 355 × 225 × 385 mm (w/h/d, including projections)

Design and specifications are subject to change without notice.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

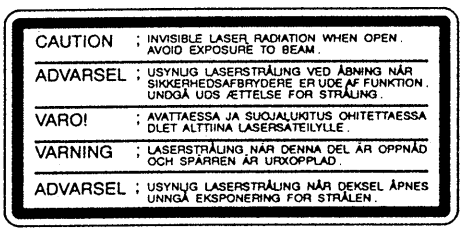
CD Section	Model Name Using Similar Mechanism	HCD-H150/H500
	Base Unit Name	BU-5BD3
DECK Section	Model Name Using Similar Mechanism	HCD-D109
	Tape Transport Mechanism Type	TCM-180VW-H9

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.



Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

The following caution label is located inside of the unit.

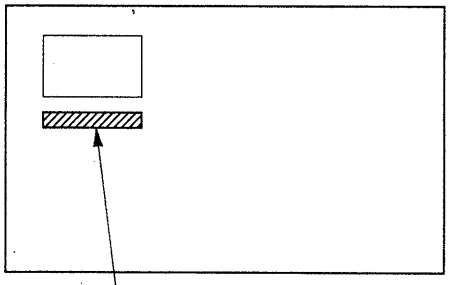

CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSATEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URKOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

COMPACT DISC DECK

SONY®

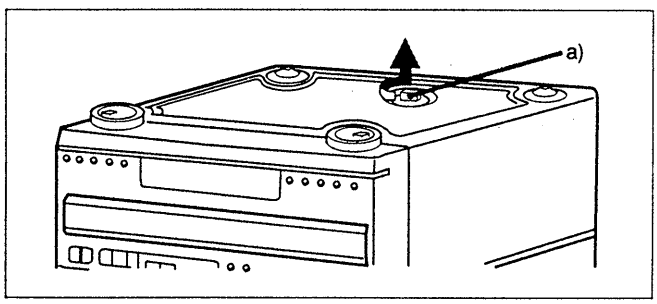
MODEL IDENTIFICATION

Back Panel



4-955-796-01: AEP, UK, Italian, Models
4-955-796-21: US, Canadian Models
4-955-819-31: HTC-D309E Model

Note on the Transit key



The transit key (a)) on the bottom exterior of the CD player protects the optical system against shock during transportation.
Before operating the unit, be sure to remove the key by following the instructions on the label, and store it in a safe place.
When transporting the unit, put the key its original position and lock it in place.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

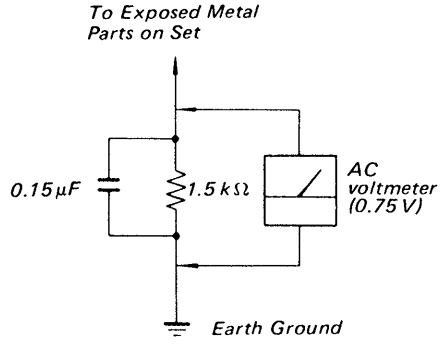
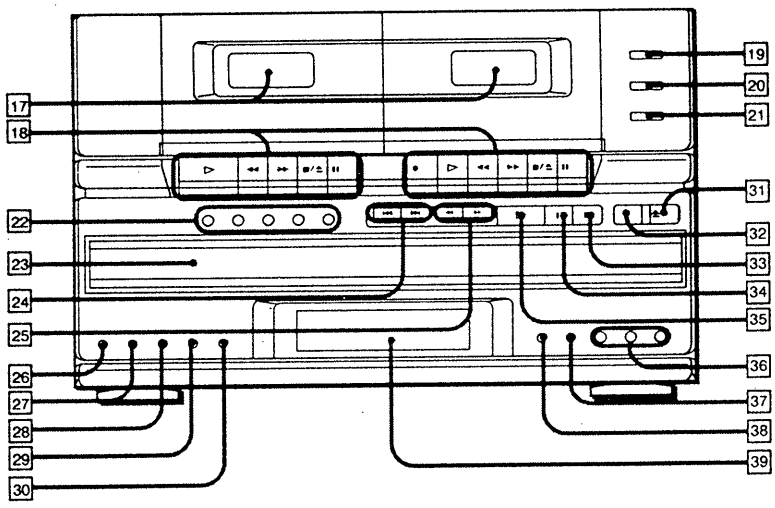


Fig. A. Using an AC voltmeter to check AC leakage.

Location of Controls



Cassette Deck

17 Cassette holders
18 Tape operation buttons (24)
◀◀ Leftward fast winding
▶▶ Rightward fast winding
▶ Forward play
■/⏏ Stop/eject
❚❚ PAUSE Pause
● REC Record
19 TAPE SELECT button (24, 26, 30)
20 DUBBING SPEED (HIGH/NORMAL) button (30)
21 DOLBY NR (noise reduction) button (Except E model) (24, 26)

Compact Disc Player

22 DISC 1 – 5 buttons (32, 36, 40, 42, 44)
23 Disc tray
24 ⏮/⏭ (AMS*) buttons (36, 42, 44, 54, 62)
25 ◀◀/▶▶ (manual search) buttons (38, 54, 62)
26 TIME button (34)
27 FADER button (60)
28 EDIT/TIME FADE button (54, 60)
29 CHECK (program check) button (44)
30 CLEAR (program clear) button (46)
31 ⏏ OPEN/CLOSE button (32)
32 DISC SKIP button (32, 36)
33 ■ (stop) button (32)
34 ❚❚ (pause) button (32)
35 ▶ (play) button (32)
36 PLAY MODE button
PROGRAM button (42, 52)
SHUFFLE button (40)
CONTINUE button (32)
37 MUSIC SCAN button (48)
38 REPEAT button (50)
39 Display window

* AMS is the abbreviation of Automatic Music Sensor.

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENTS

1. Clean the following parts with a denatured alcohol-moistened swab :

record/playback heads	pinch rollers
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	30 – 70g · cm (0.42 – 0.97oz · inch)
FWD Back tension	CQ-102C	1.5 – 5.5g · cm (0.020 – 0.076oz · inch)
FF/REW	CQ-201B	63g · cm or more (0.87oz · inch)

Chucking Arm Height Adjustment

This Adjustment should be performed after the electrical adjustment and on replacing adjusting screw, magnet, or chucking pulley.

Procedure:

1. Set disc (YEDS-18) to the optical pick-up block. (Fig. A)
2. Adjust the bracket (press pulley) to the center of the magnet with adjusting screw. (Fig. B)

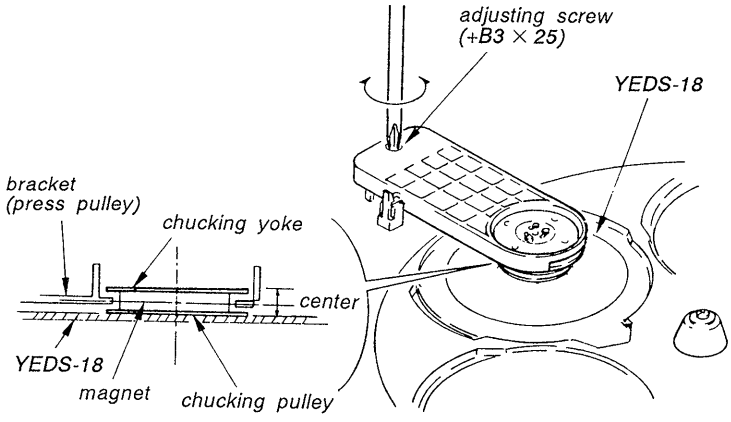


Fig. B Fig. A

2-2. ELECTRICAL ADJUSTMENTS

0dB = 0.775V (AF)

[ ] indicates for E model.

CASSETTE DECK SECTION

1. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.

  TAPE SELECT switch : TYPE 1

Type	Signal	Used for
P-4-A100	10kHz, – 10dB	Azimath Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

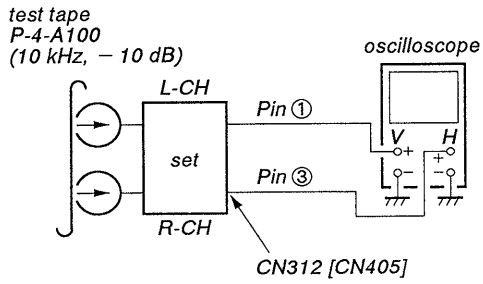
Record/Playback Head Azimuth Adjustment

DECK A DECK B

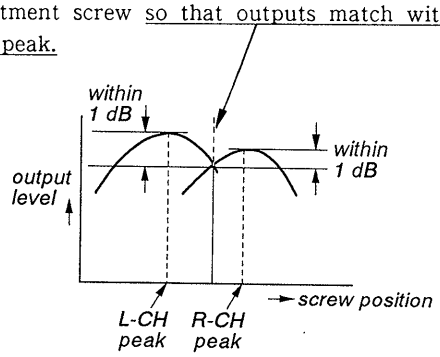
Note: Perform this adjustments for both decks.

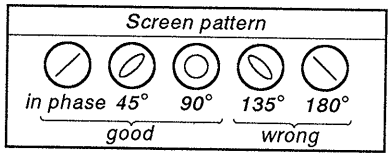
Procedure:

1. Mode : FWD playback



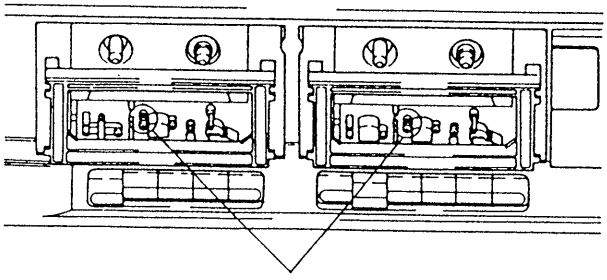
2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.





3. After the adjustments, apply suitable locking compound to the parts adjusted.

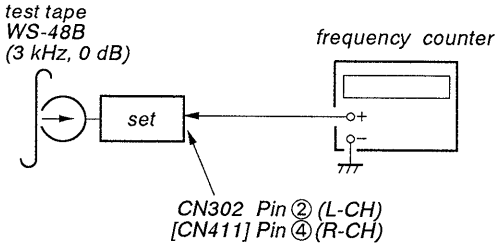
Adjustment Location:



Tape Speed Adjustment DECK A DECK B

Procedure:

Mode : Playback



- High speed adjustment (Must be first Adjustment B deck)
  1. Short pin CNP311 [CNP407] on set "DUBBING" speed switch to "HIGH". Then at HIGH speed mode.
  2. Adjust RV371 [RV504] so that the frequency counter reads 6,000 ± 20Hz.

- NORMAL speed adjustment
  1. Remove the short pin from CNP311 [CNP407] on set "DUBBING" speed switch to "NORMAL". Then at NORMAL speed mode.
  2. Adjust RV372 [RV505] so that the frequency counter reads 3,000 ± 10Hz.

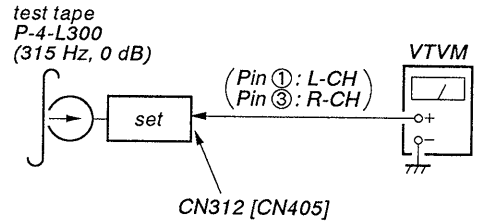
(See right for Adjusting Parts Location)

Frequency difference between deck A and deck B the beginning of the tape should be within 1%.

Playback Level Adjustment DECK A DECK B

Procedure:

Mode : FWD Playback



DECK-A side RV101 [RV400] (L-CH), RV201 [RV500] (R-CH)
DECK-B side RV102 [RV401] (L-CH), RV202 [RV501] (R-CH)
so that the limits below are satisfied.

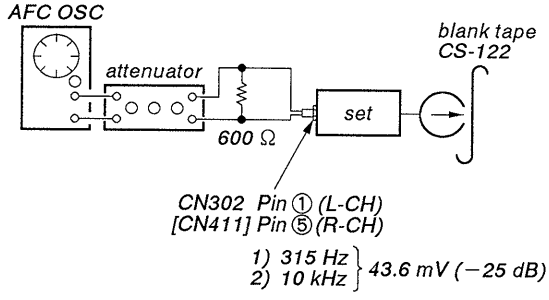
Adjustable limits:

CN405 level : 461.6 – 411.4mV (−4.5 ~ −5.5dB)
level difference between the channels : within 1.0dB
(See right for Adjusting Parts Location)

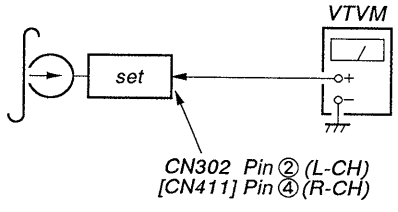
Record BIAS Current Adjustment DECK B

Procedure:

1. Mode : record



2. Mode : Playback



(1) Supply a 43.6mV (−25dB) signal (315Hz) from the CN302. Adjust the VOLUME control so that a 24.5mV (−30dB) signal is output to the headphones terminal.
(2) Insert alignment tape CS-122 into deck B and put the set into the REC mode.
(3) Adjust the signal frequency to 10kHz.
(4) Put the set into the PB mode and adjust RV151 [RV403] (L-CH) and RV251 [RV503] (R-CH) in the REC mode so that the level difference between 315Hz and 10kHz is within 0 ± 0.5dB.
(5) Repeatedly put the set into the REC and PB modes two to four times and adjust the bias.

Adjustable limits:

The playback level of 10kHz signal relative to that of 315Hz : 0dB ± 0.5dB.

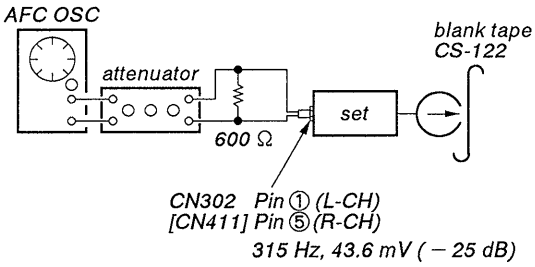
Record Level Adjustment DECK B

Setting:

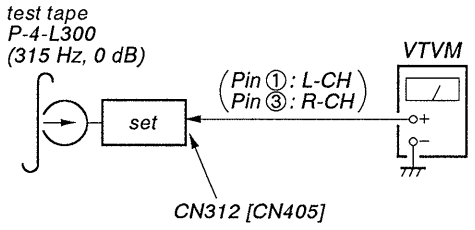
TAPE SELECT : TYPE 1

Procedure:

1. Mode : record



2. Mode : playback



(1) Supply a 43.6mV (−25dB) signal (315Hz) from the CD terminal.
(2) Insert alignment tape CS-122 into deck B and record the signal. Then playback the recorded portion of the tape and adjust RV103 [RV402] (L-CH) and RV203 [RV502] (R-CH) so that the 43.6mV (−25dB) signal output is obtained at CN302 [CN411] terminal.

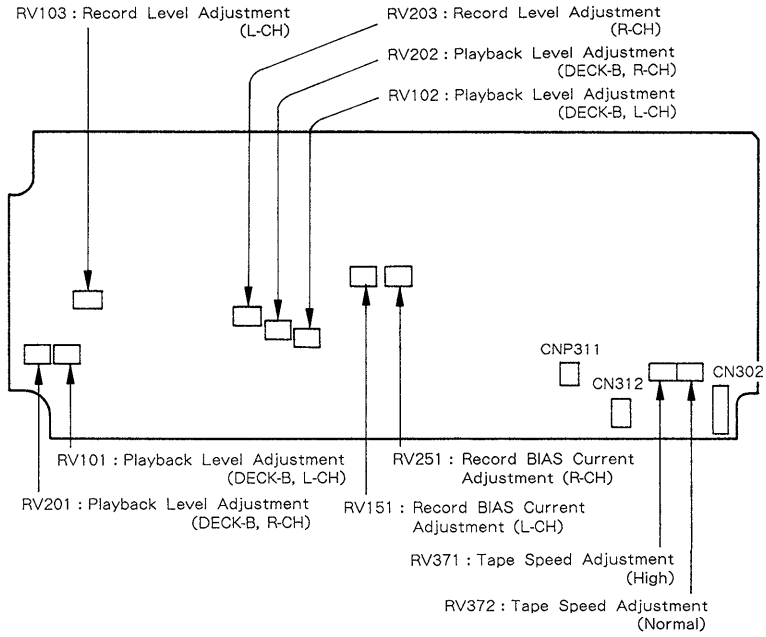
Adjustable limits:

CN312 [CN405] level : 46.2 − 41.1mV (−24.5 ~ −25.5dB)

• Adjusting Parts Location

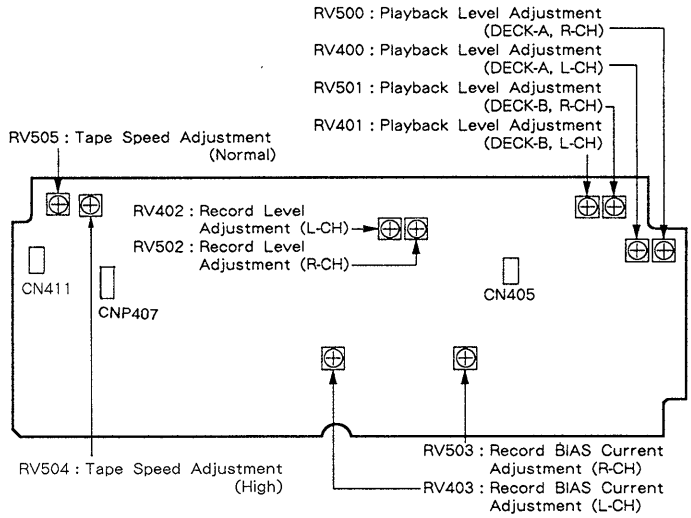
Except E Model:

TC MAIN BOARD (Component Side)


RV103 : Record Level Adjustment (L-CH)
RV203 : Record Level Adjustment (R-CH)
RV202 : Playback Level Adjustment (DECK-B, R-CH)
RV102 : Playback Level Adjustment (DECK-B, L-CH)
CNP311
CN312
CN302
RV101 : Playback Level Adjustment (DECK-B, L-CH)
RV251 : Record BIAS Current Adjustment (R-CH)
RV201 : Playback Level Adjustment (DECK-B, R-CH)
RV151 : Record BIAS Current Adjustment (L-CH)
RV371 : Tape Speed Adjustment (High)
RV372 : Tape Speed Adjustment (Normal)

E Model:

TC MAIN BOARD (Component Side)

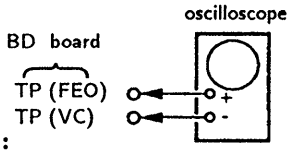

RV500 : Playback Level Adjustment (DECK-A, R-CH)
RV400 : Playback Level Adjustment (DECK-A, L-CH)
RV501 : Playback Level Adjustment (DECK-B, R-CH)
RV401 : Playback Level Adjustment (DECK-B, L-CH)
RV505 : Tape Speed Adjustment (Normal)
RV402 : Record Level Adjustment (L-CH)
RV502 : Record Level Adjustment (R-CH)
CN411
CNP407
CN405
RV504 : Tape Speed Adjustment (High)
RV503 : Record BIAS Current Adjustment (R-CH)
RV403 : Record BIAS Current Adjustment (L-CH)

CD SECTION

Note :

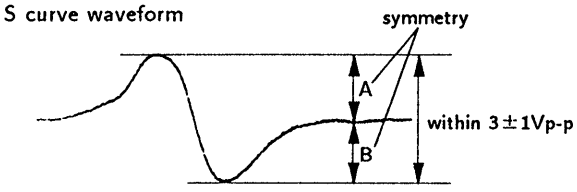
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

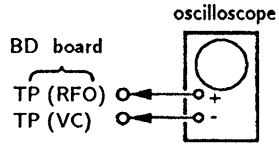


5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.

• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

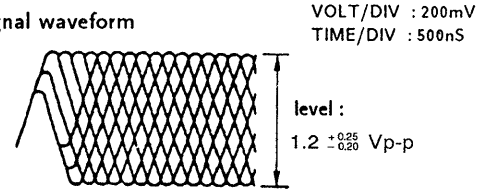


Procedure :

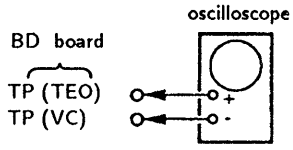
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

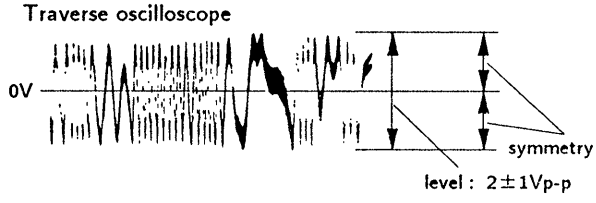


E-F Balance Check



Procedure :

1. Connect test point TP (TEST) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

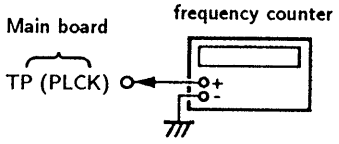


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218MHz.

Focus/Tracking Gain

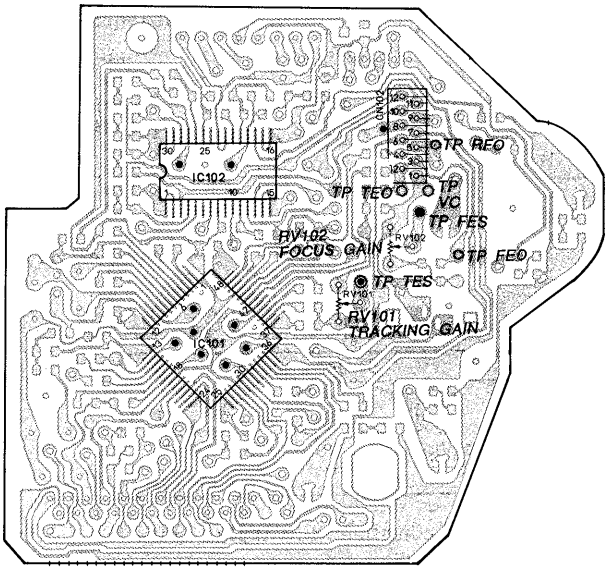
This gain has a margin, so even if it is slightly off. There is no problem.

Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

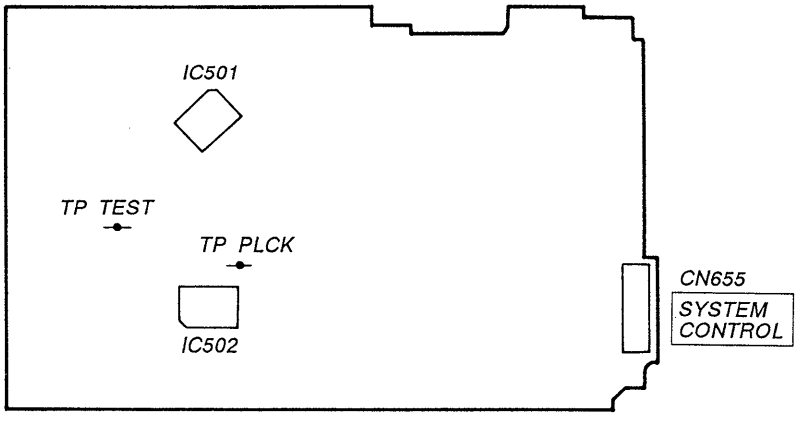
Adjustment Locations :
【BD board】

— conductor side —



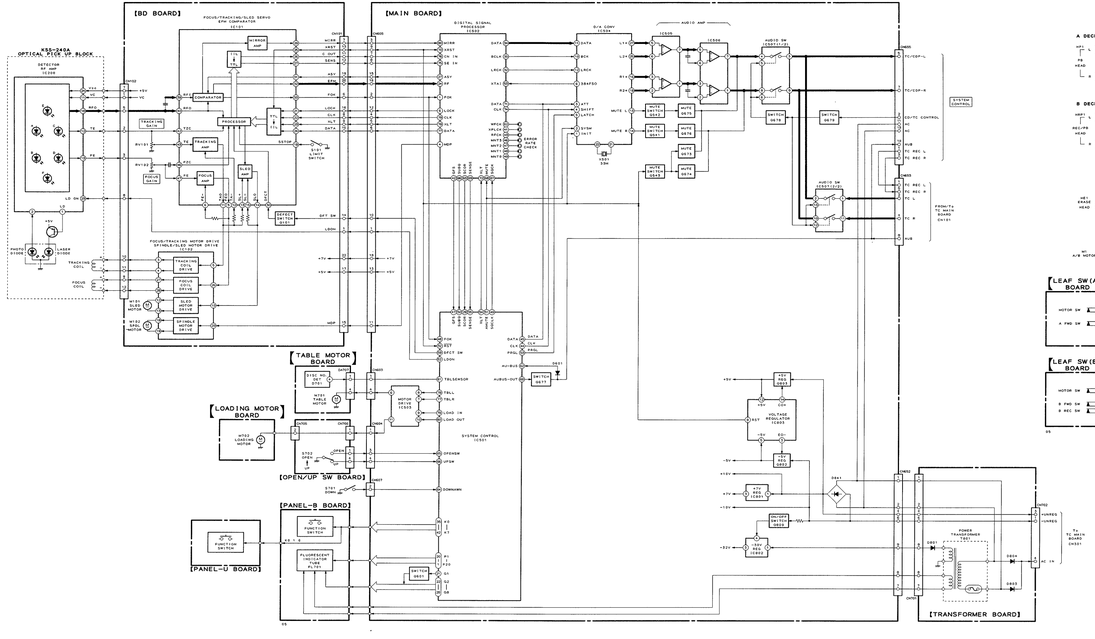
Adjustment Location ;

MAIN BOARD (Conductor Side)



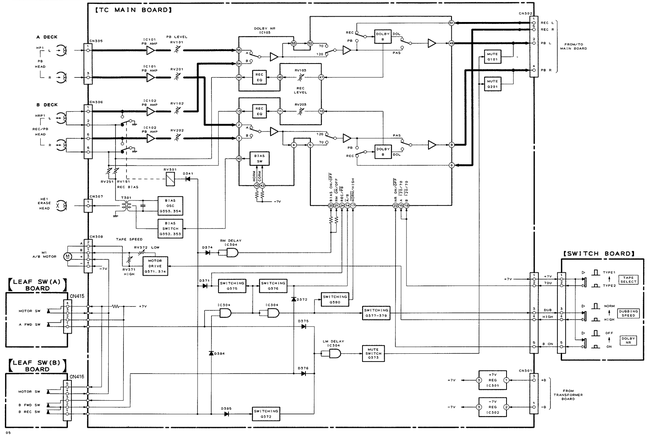
SECTION 3
DIAGRAMS

3-1. CD SECTION BLOCK DIAGRAM

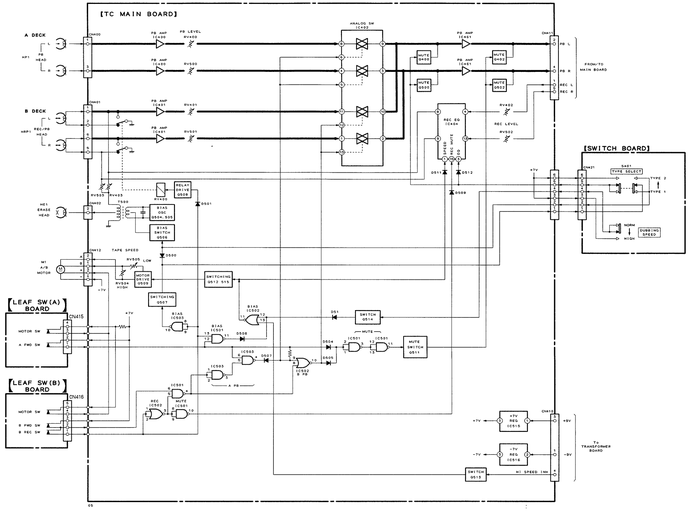


3-2. CASSETTE DECK SECTION BLOCK DIAGRAM

EXCEPT E MODEL

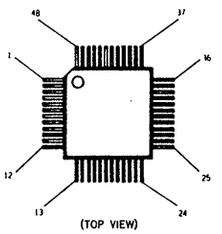


E MODEL



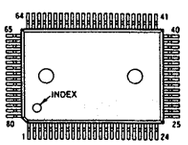
• Semiconductor Lead Layouts

CXA1372AQ



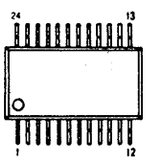
(TOP VIEW)

CXD2500BQ
CXP50120-024Q



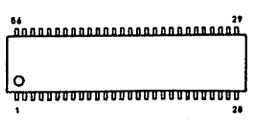
(TOP VIEW)

CXD2565M



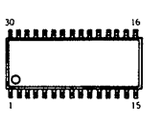
(TOP VIEW)

HA12171NT



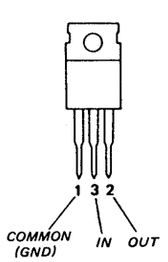
(TOP VIEW)

LA6532M

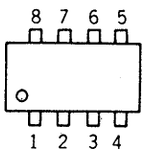


TOP VIEW

M5F79M07

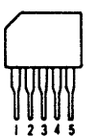


M5218AP

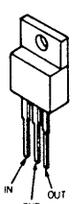


(Top view)

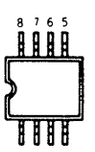
M5293L



TA7807S

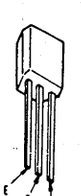


μPC4570G2

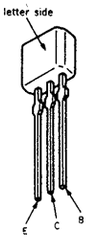


(TOP VIEW)

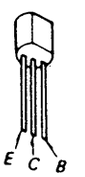
DTA114ES
DTA144ES
DTC114ES
DTC144ES
2SC2603-EF
2SC945-P
2SC1815-Y



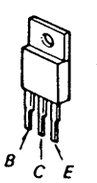
2SA1175-HFE
2SC2785-HFE
2SC3623A-LK



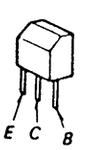
2SB1013-4



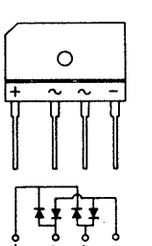
2SB1094-LK



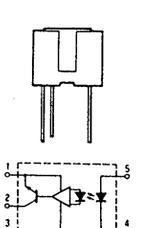
2SD774-34



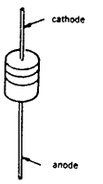
D2SB20



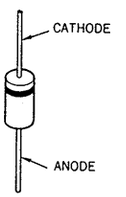
GP-1A521

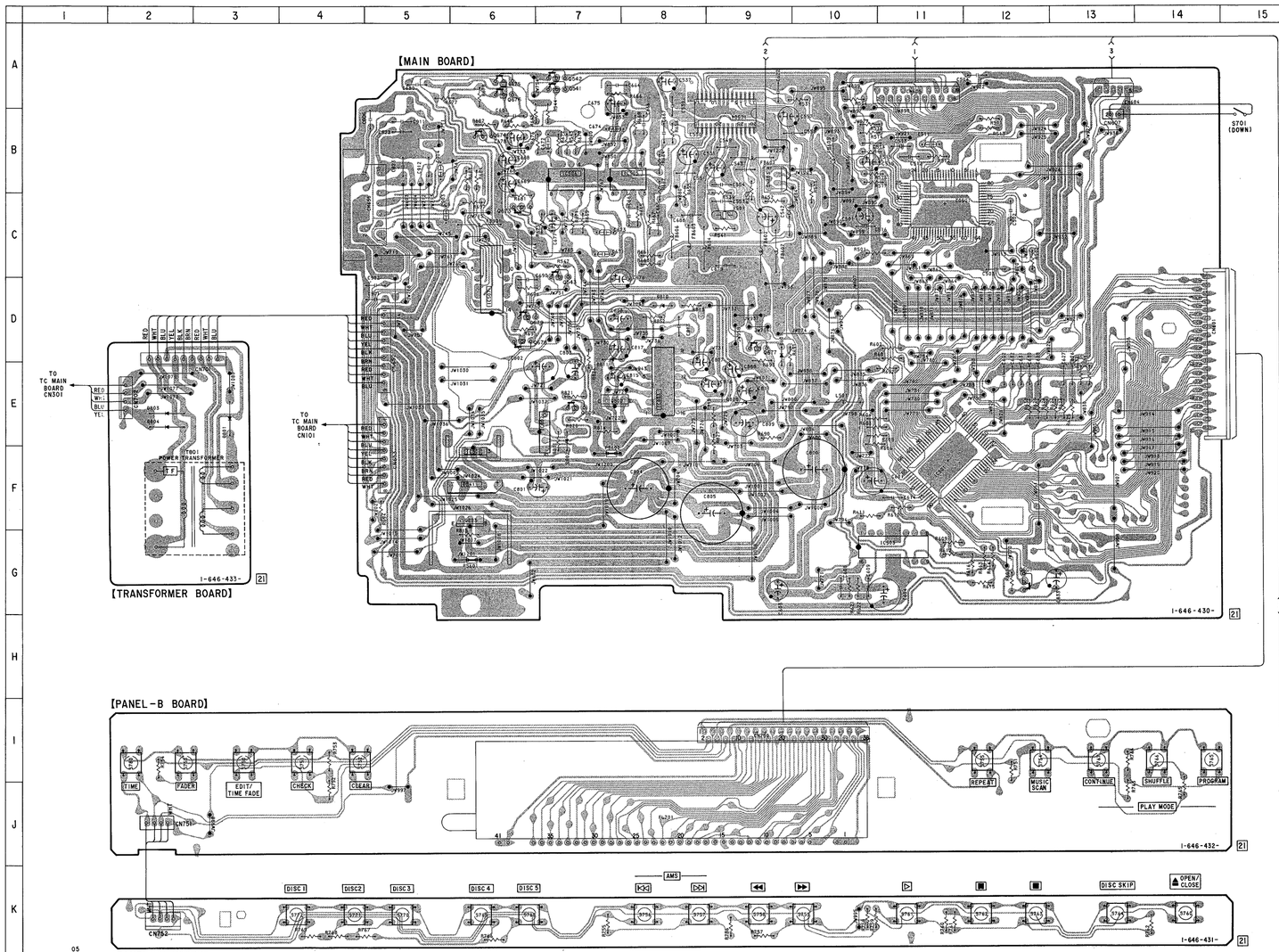


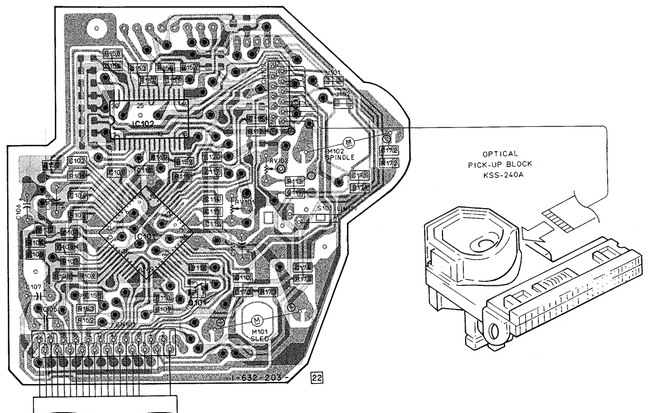
HZS7C2L
UZL-7L1
UZ-2.7BS
11ES2

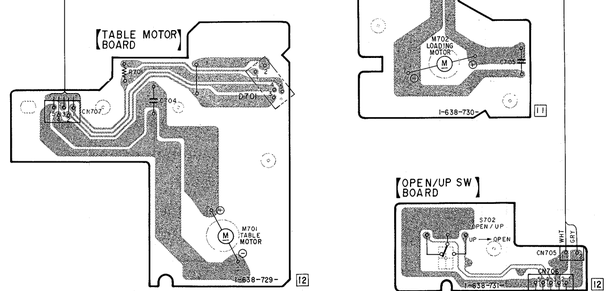


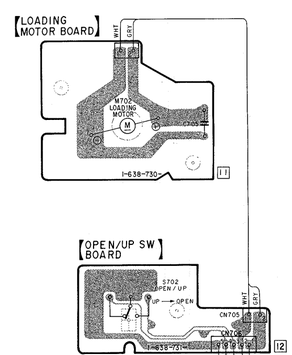
1N4148M









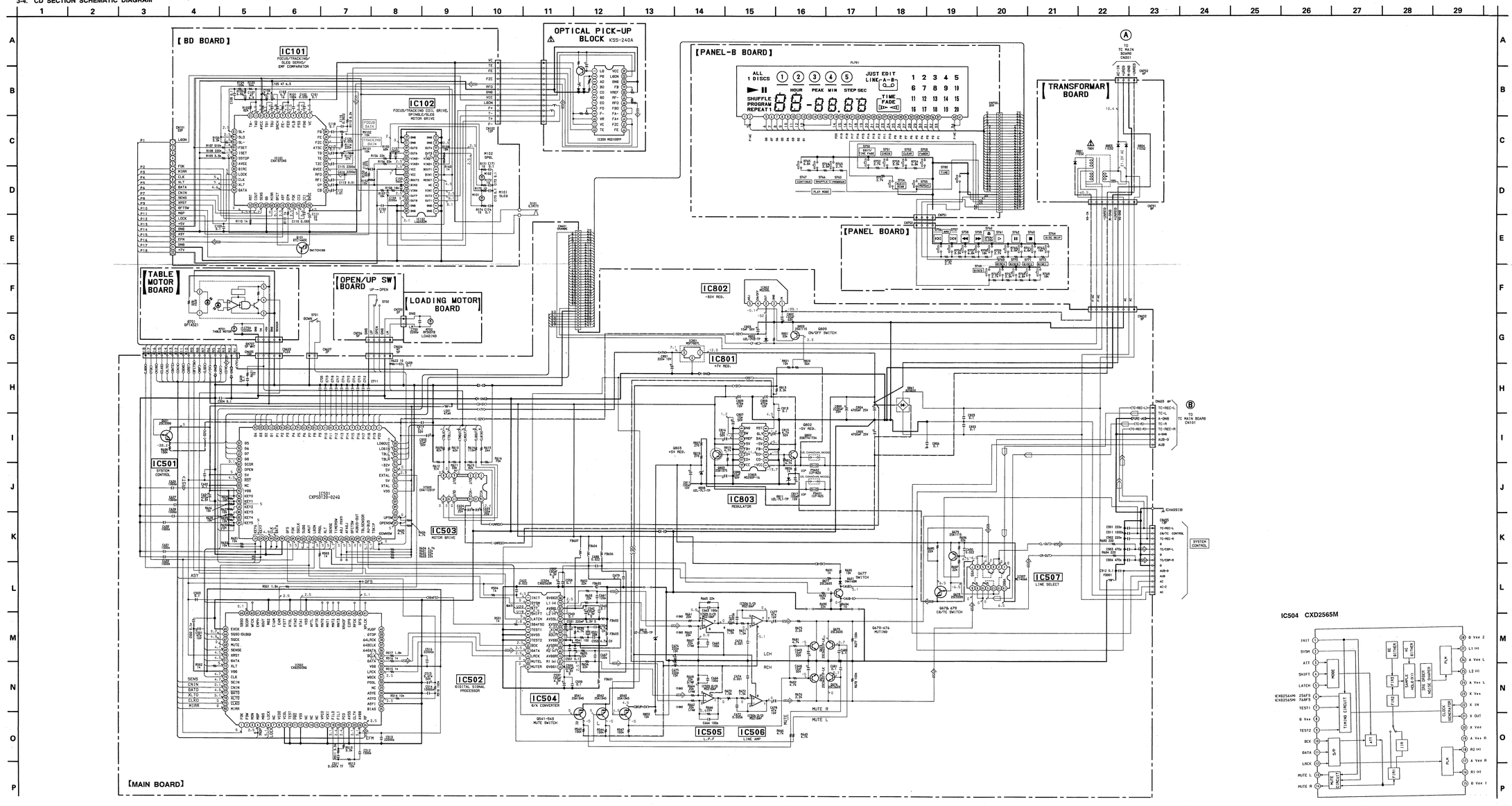


● Semiconductor Location

Ref. No.	Location
D601	D-9
D701	I-18
D801	E-3
D802	E-7
D803	E-2
D804	E-2
D808	E-9
D810	D-8
D811	D-7
D841	F-6
IC101	C-17
IC102	B-17
IC501	F-11
IC502	C-11
IC503	G-11
IC504	B-9
IC505	B-8
IC506	B-7
IC507	D-6
IC801	F-6
IC802	E-7
IC803	E-8

Note on Printed Wiring Board:

- ● ○——: parts extracted from the component side.
- ● ▨: Pattern on the side which is seen.
- ● ▨: Pattern of the rear side.



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ⟐ ═══ : B + Line.
- ⟐ ═══ : B − Line.
- ⟐ ▭ : adjustment for repair.
- ⟐ Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark :CD PLAY (COMMON)
  ( ) :DECK A PB
  ≪ ≫ :DECK B PB
- ⟐ Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- ⟐ Signal path.
  ▷ : CD
  ▷ : PB (DECK B)
  ▷ : REC (DECK B)

IC504 CXD2565M

3-5. CASSETTE DECK SECTION PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM (EXPECT E MODEL)

• **Semiconductor Location**

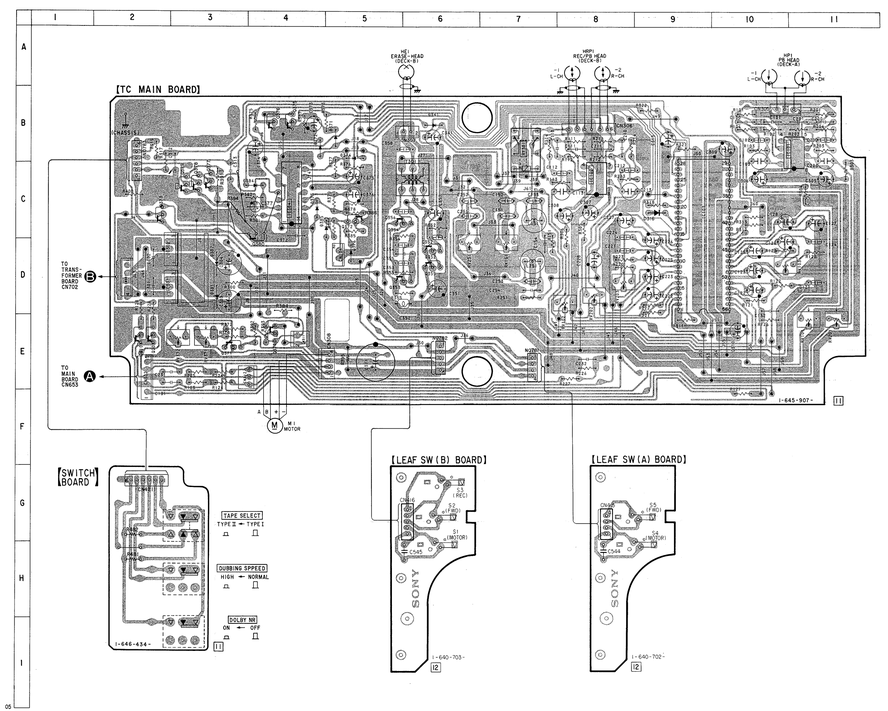
Ref. No.	Location
D301	D-3
D302	D-3
D316	D-9
D341	B-6
D371	B-5
D372	B-4
D374	B-5
D375	C-4
D376	D-5
D384	C-4
D385	C-5
IC101	B-11
IC102	C-8
IC103	C-9
IC301	D-2
IC302	D-2
IC304	C-4
Q101	E-2
Q201	E-2
Q352	D-6
Q353	C-6
Q354	C-6
Q355	D-6
Q371	E-3
Q372	C-5
Q373	C-2
Q374	E-4
Q375	B-4
Q376	B-4
Q377	C-3
Q378	C-3
Q379	C-3
Q380	C-4

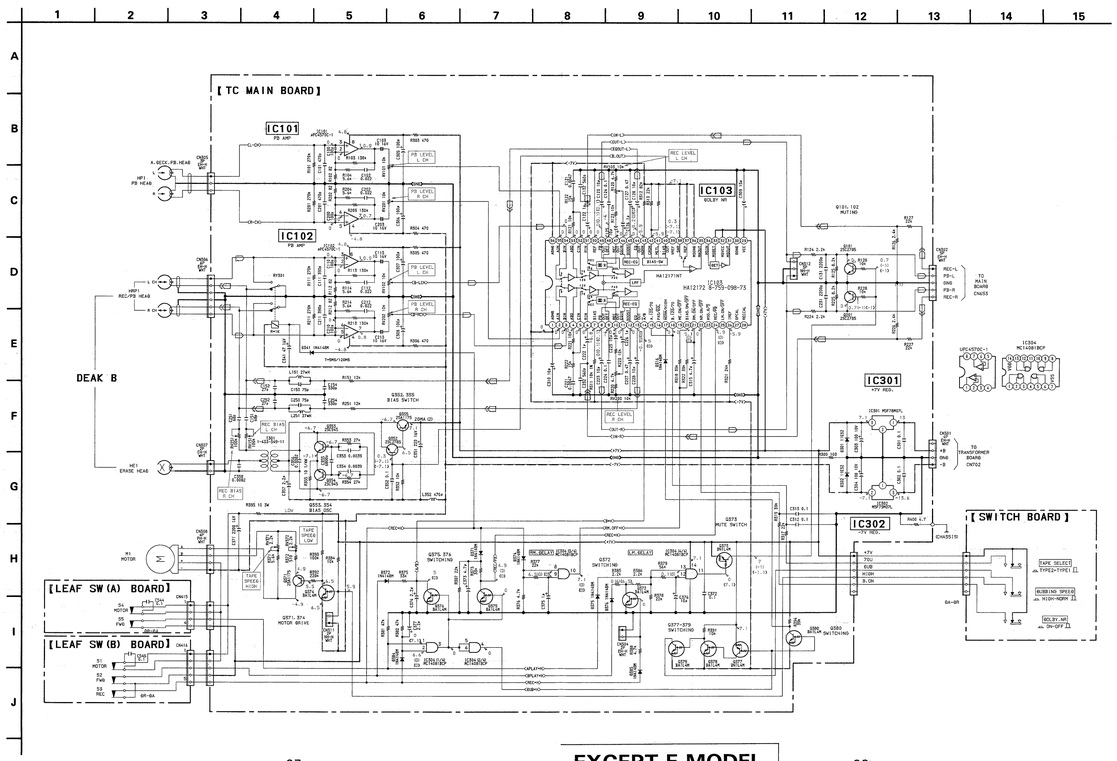
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▭▭▭ : B ÷ Line.
- ▭▭▭ : B − Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark :REC (COMMON)
  ( ) :DECK A PB
  ≪ ≫ :DECK B PB
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : CD
  ⇨ : PB (DECK B)
  ⇨ : REC (DECK B)

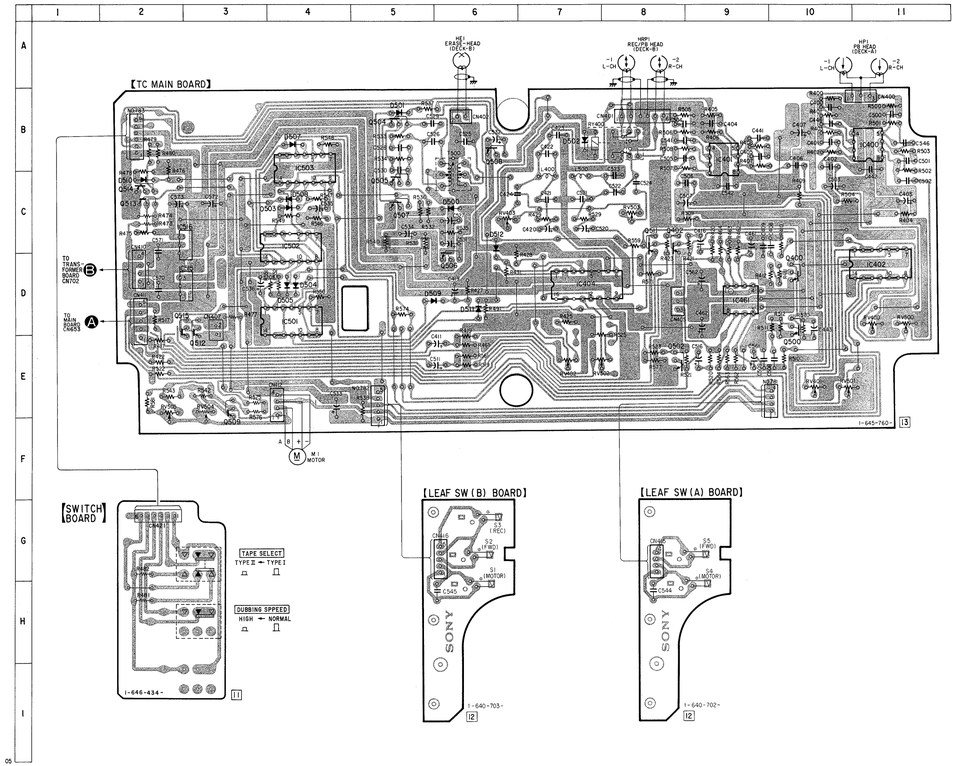




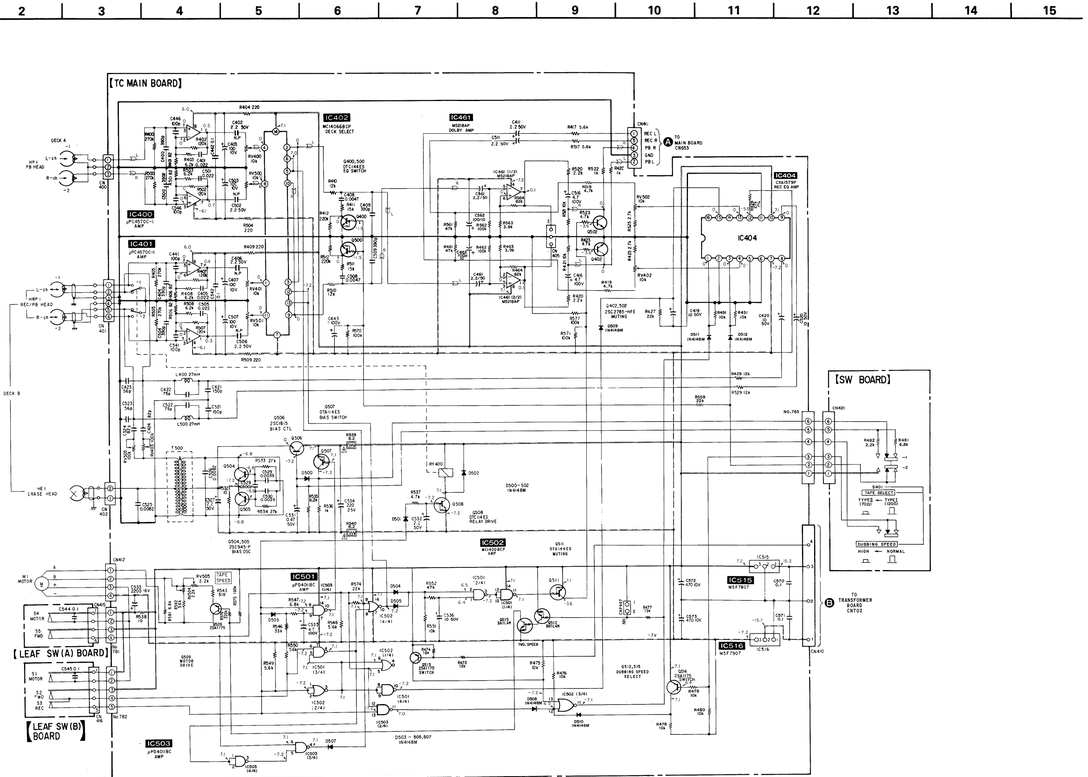
3-6. CASSETTE DECK SECTION PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM (E MODEL)

• **Semiconductor Location**

Ref. No.	Location
D500	C-6
D501	B-5
D502	B-7
D503	C-4
D504	D-4
D505	D-4
D507	B-4
D508	C-4
D509	D-6
D510	C-2
D511	D-6
D512	C-6
IC400	B-11
IC401	B-9
IC402	D-11
IC404	D-7
IC461	D-9
IC501	D-4
IC502	C-4
IC503	B-4
IC515	D-3
IC516	C-3
Q400	D-10
Q402	C-8
Q500	D-10
Q502	E-8
Q504	B-5
Q505	C-5
Q506	D-6
Q507	C-5
Q508	B-6
Q509	E-3
Q511	C-8
Q512	D-3
Q513	C-2
Q514	C-2
Q515	D-3



Note on Printed Wiring Board:
• o——— : parts extracted from the component side.



SECTION 4
EXPLODED VIEWS

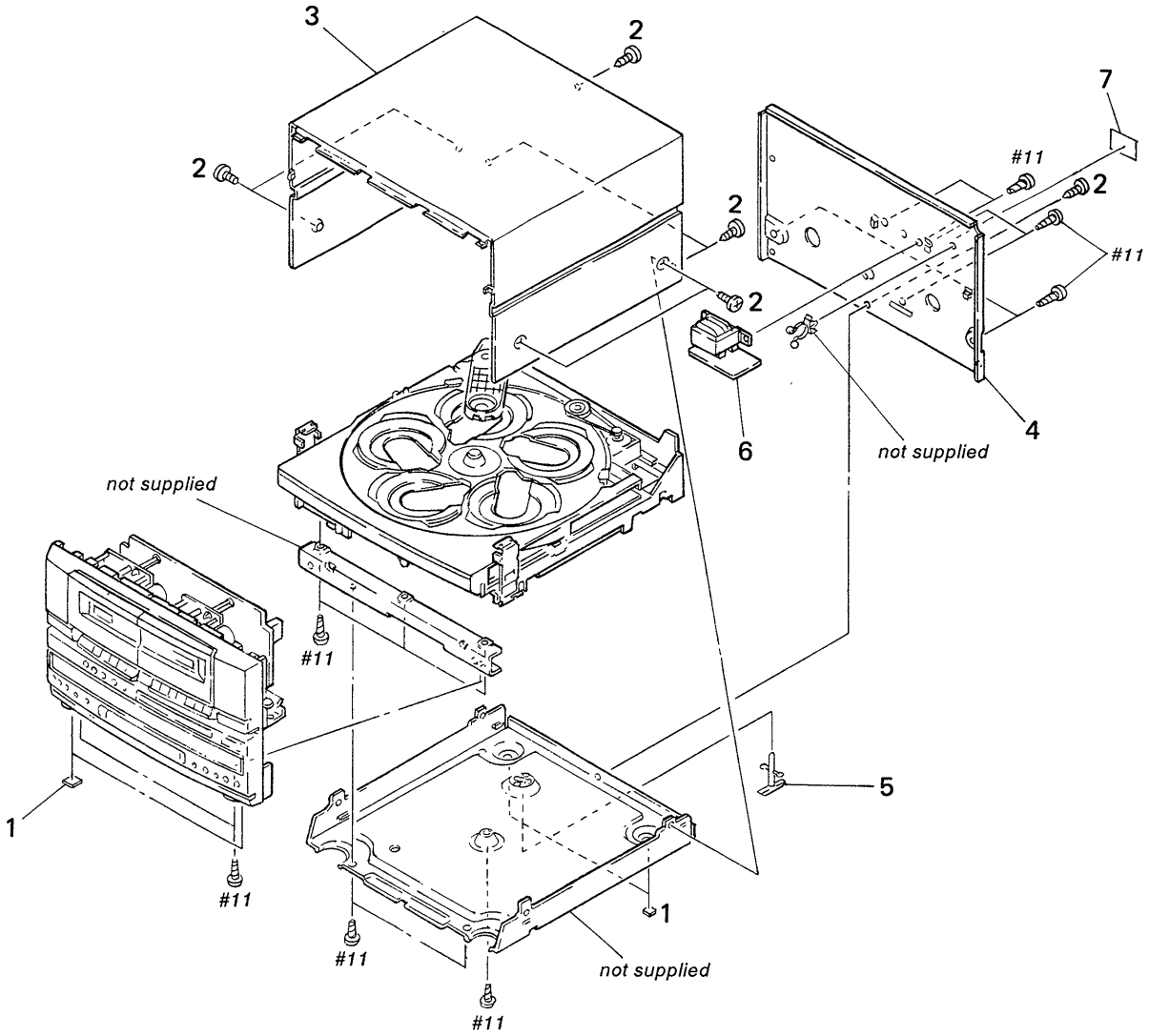
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- Abbreviation
  IT: Italian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

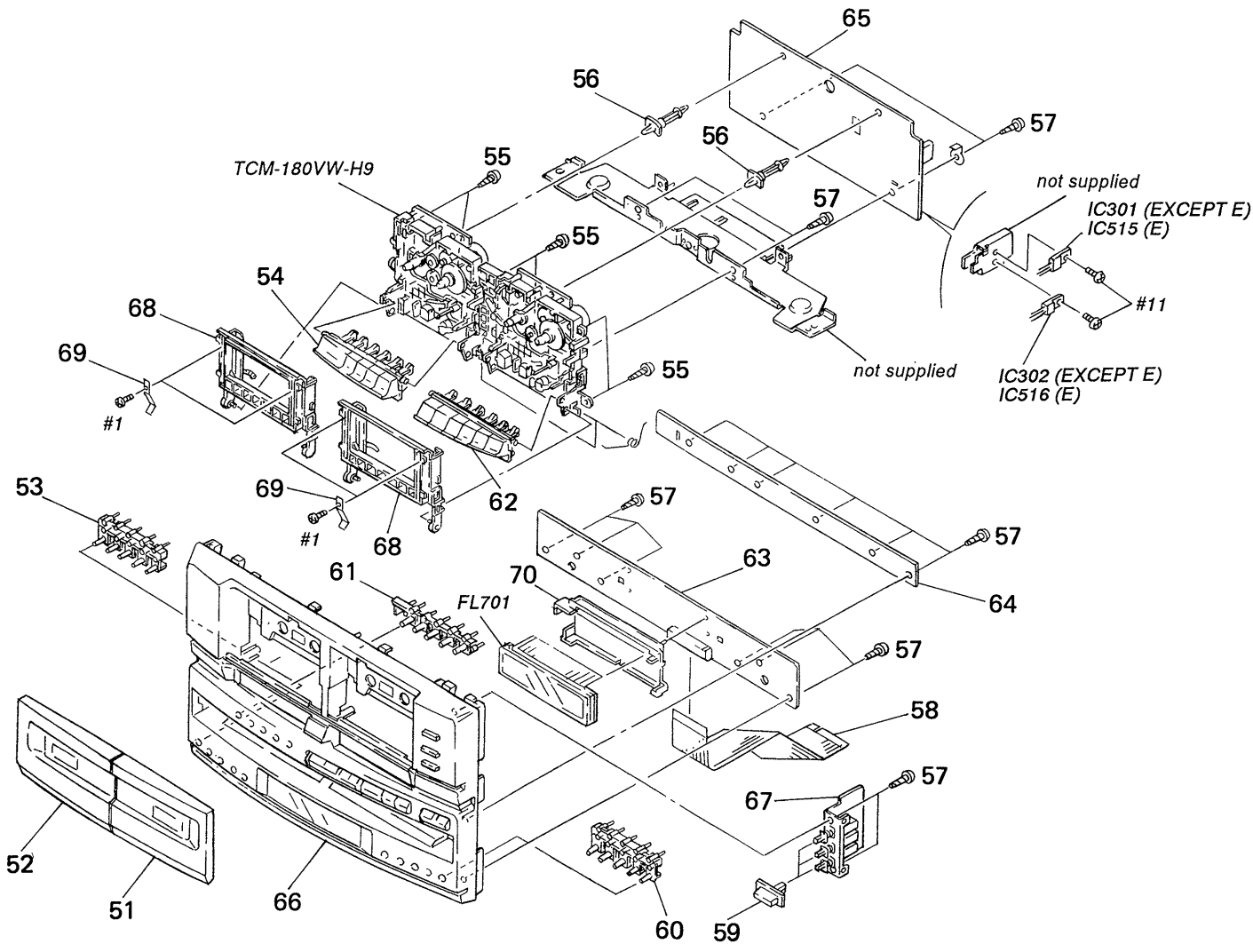
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

(1) CASE SECTION



Ref. No.	Part No.	Description	Remark
1	4-948-236-01	CUSHION (107)	
2	3-704-366-01	SCREW (CASE) (M3X8)	
* 3	4-955-795-11	CASE	
* 4	4-955-796-01	PANEL, BACK (AEP, UK, IT)	
* 4	4-955-796-21	PANEL, BACK (US, Canadian)	
* 4	4-955-796-31	PANEL, BACK (E)	
5	4-937-945-01	PLATE (TRANSPORT), LOCK	
* 6	1-646-433-11	TRANSFORMER BOARD	
* 7	4-941-548-01	LABEL, CLASS 1 (AEP, UK, E, IT)	

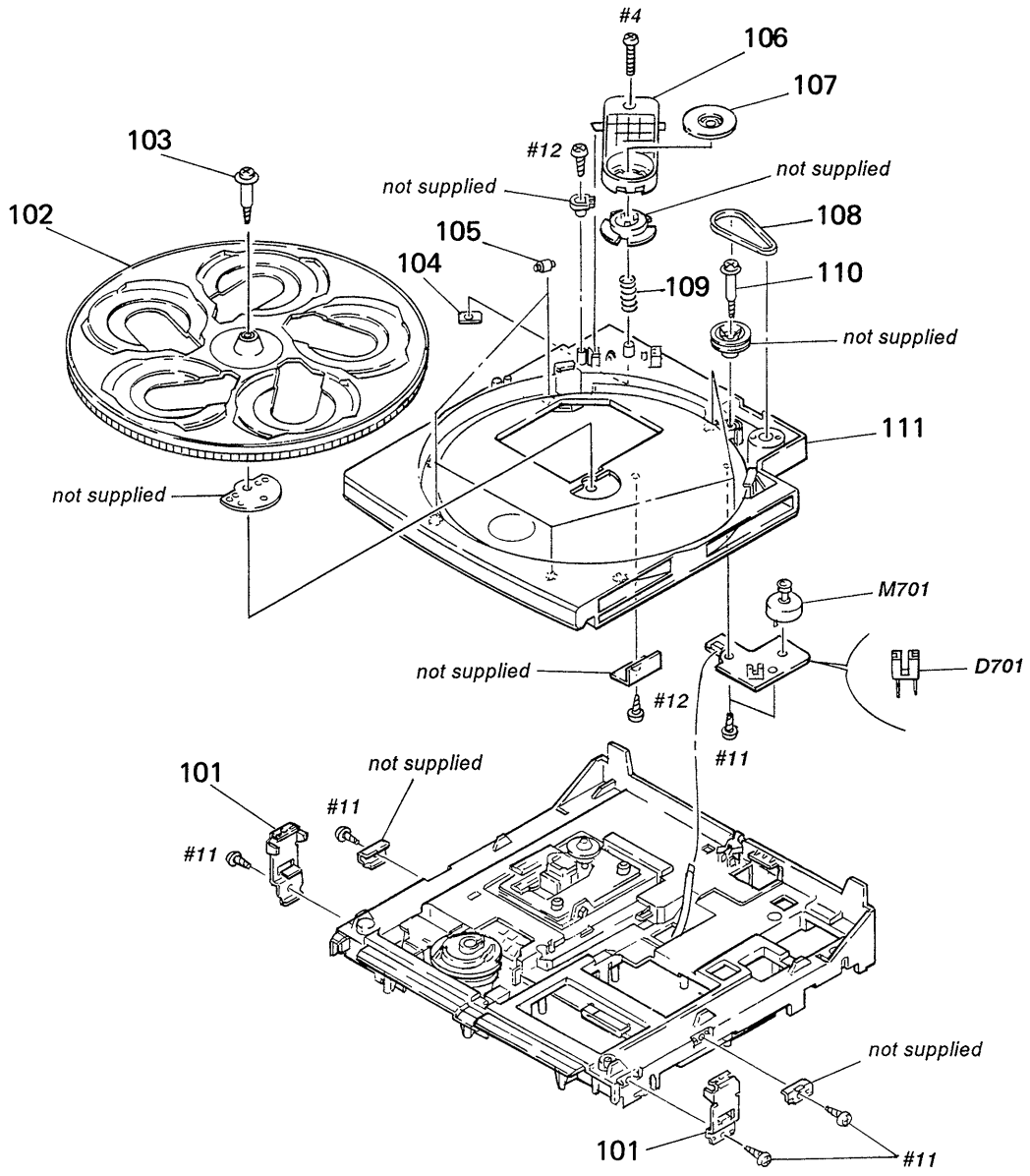
(2) FRONT PANEL ASSEMBLY SECTION



Ref. No.	Part No.	Description	Remark
51	X-4943-185-1	LID (B) ASSY, CASSETTE	
52	X-4943-184-1	LID (A) ASSY, CASSETTE	
53	4-956-743-01	BUTTON (CDM-E)	
54	4-955-790-01	BUTTON (MD-A)	
55	4-951-620-11	SCREW (2.6X10), +BVTP	
* 56	4-924-098-81	HOLDER, PC BOARD	
57	4-951-620-01	SCREW (2.6X8), +BVTP	
58	1-751-055-31	WIRE (FLAT TYPE) (37 CORE)	
59	4-948-257-01	BUTTON (DDT)	
60	4-955-786-01	BUTTON (CDM-C)	
61	4-955-793-01	BUTTON (DDM-D)	
62	4-955-791-01	BUTTON (MD-B)	
* 63	1-646-432-11	PANEL-B BOARD	
* 64	1-646-431-11	PANEL-U BOARD	

Ref. No.	Part No.	Description	Remark
* 65	A-4360-824-A	TC MAIN BOARD, COMPLETE (EXCEPT E)	
* 65	A-4360-825-A	TC MAIN BOARD, COMPLETE (E)	
66	X-4943-186-1	PANEL ASSY, FRONT (US, Canadian, AEP, UK, IT)	
66	X-4943-187-1	PANEL ASSY, FRONT (E)	
* 67	A-4356-622-A	SW BOARD, COMPLETE (UK)	
68	3-358-266-02	HOLDER, CASSETTE	
69	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF	
70	4-955-792-01	HOLDER (5M), FL TUBE	
FL701	1-519-721-31	INDICATOR TUBE, FLUORESCENT	
IC301	8-759-071-48	IC TA7807S	
IC302	8-759-604-95	IC M5F79M07	
IC515	8-759-605-00	IC M5F78M07	
IC516	8-759-604-95	IC M5F79M07	

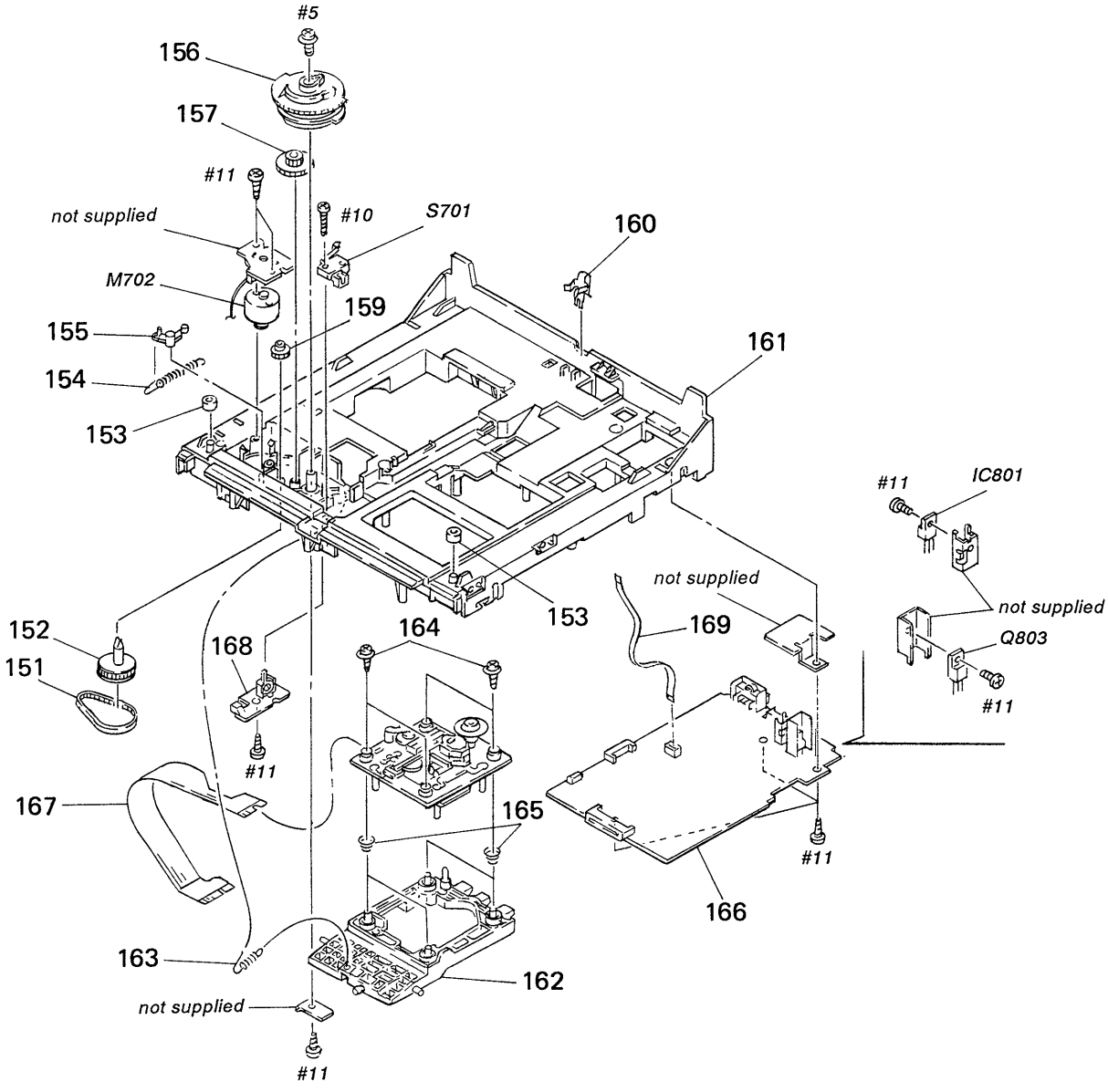
(3) TURNTABLE ASSEMBLY SECTION



Ref. No.	Part No.	Description	Remark
* 101	4-955-798-01	BRACKET (CDM)	
102	4-926-384-01	SCREW, STEP	
* 103	4-926-383-01	TABLE (B), DISK	
* 104	4-926-388-01	BRACKET (ADJUSTMENT)	
105	X-4924-457-1	ROLLER ASSY	
* 106	4-930-506-02	BRACKET (PRESS PULLEY)	
* 107	1-452-538-11	MAGNET	

Ref. No.	Part No.	Description	Remark
108	4-926-399-01	BELT	
109	4-926-395-01	SPRING, COMPRESSION	
110	4-923-597-01	SCREW, STEP	
* 111	4-955-787-01	TABLE, DISK	
D701	8-719-970-19	DIODE GP-1A521	
M701	A-4604-849-A	MOTOR ASSY, ROTARY	

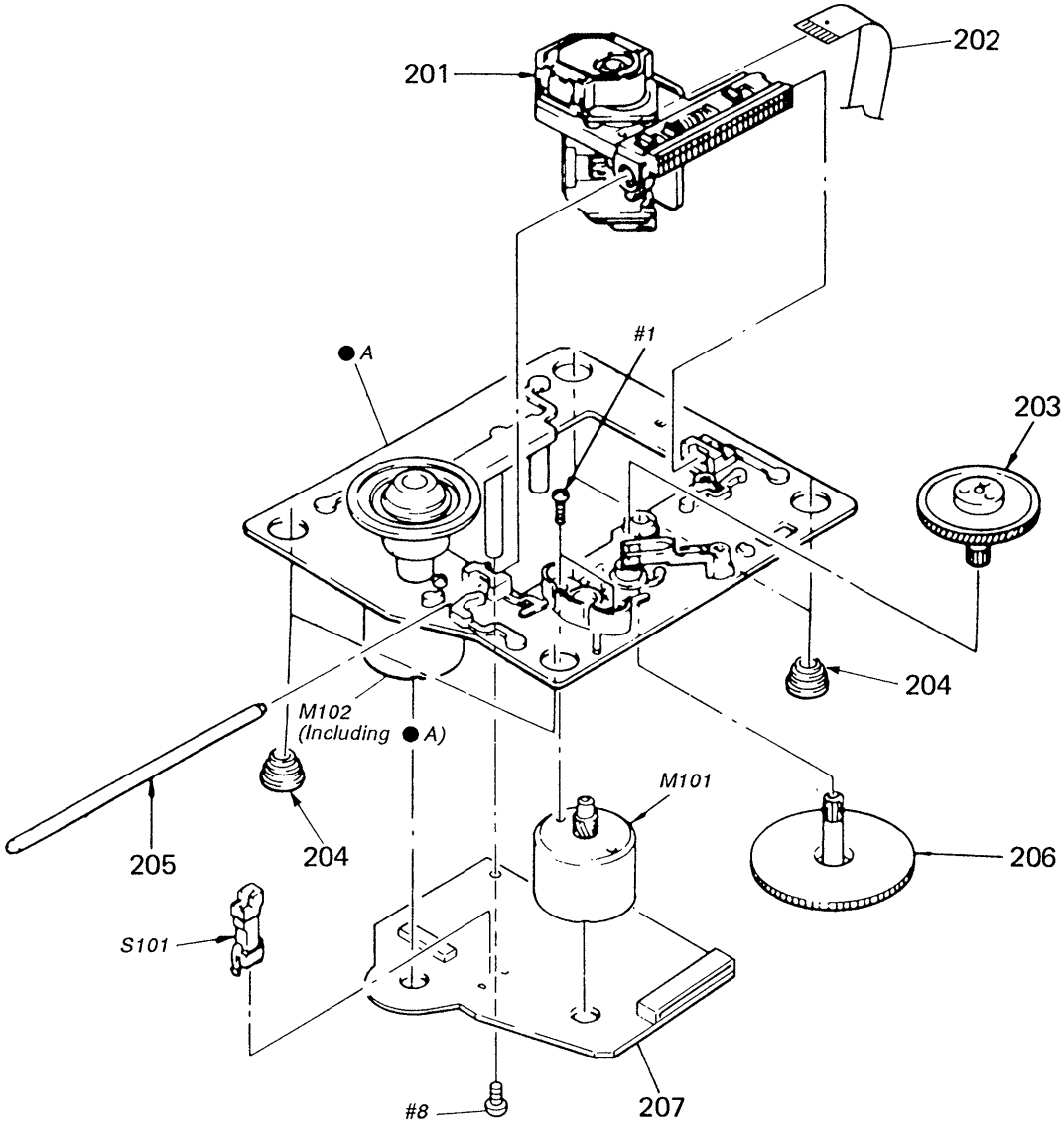
(4) CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
151	4-944-490-01	BELT (TIMING)	
152	4-934-375-01	GEAR (LOADING B)	
* 153	4-951-619-01	CUSHION (A)	
154	4-924-412-01	SPRING (B), TENSION	
155	4-917-519-11	LEVER, SET	
156	4-934-391-01	GEAR (LOADING A)	
157	4-934-381-01	GEAR (LOADING C)	
159	X-4941-529-1	PULLEY ASSY	
* 160	4-943-996-01	SPRING, LEAF	
* 161	4-943-997-31	CHASSIS	
* 162	4-934-373-01	BRACKET (BU)	
163	4-937-911-01	SPRING, TENSION	

Ref. No.	Part No.	Description	Remark
164	4-933-134-01	SCREW (+PTPWH M2.6X6)	
165	4-949-385-01	SPRING (D), COIL	
* 166	A-4356-565-A	MAIN BOARD, COMPLETE (AEP, E, IT)	
* 166	A-4356-613-A	MAIN BOARD, COMPLETE (UK)	
* 166	A-4356-631-A	MAIN BOARD, COMPLETE (US, Canadian)	
167	1-537-476-11	JUMPER, FILM (WITH TERMINAL)	
168	1-638-731-11	OPEN/UP SW BOARD	
169	1-590-849-11	WIRE, FLAT TYPE (5 CORE)	
IC801	8-759-071-48	IC TA7807S	
M702	A-4604-847-A	MOTOR ASSY, LOADING	
Q803	8-729-141-83	TRANSISTOR 2SB1094-LK	
S701	1-572-713-11	SWITCH, PUSH (WITH CONNECTOR)	

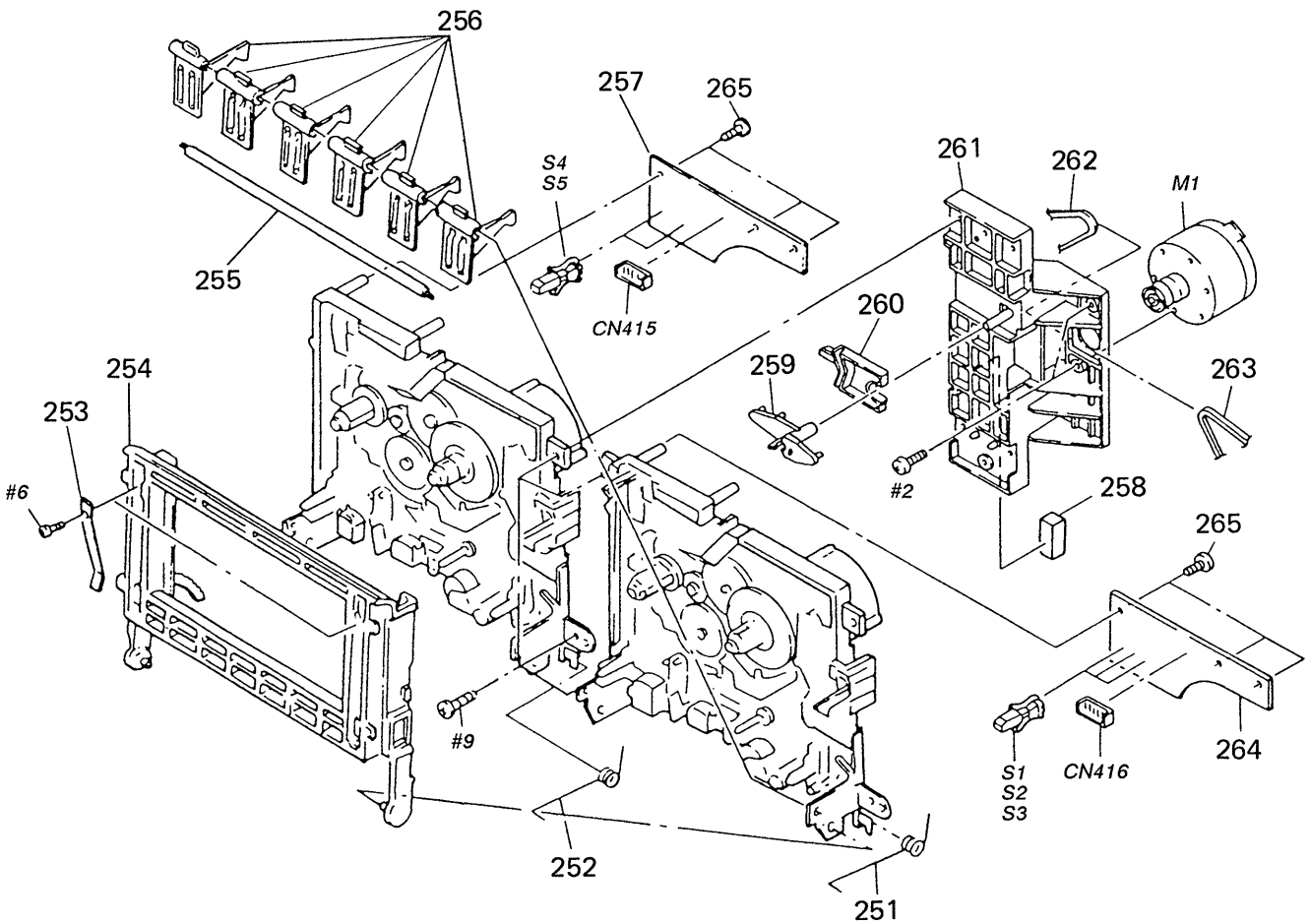
(5) OPTICAL PICK-UP BLOCK ASSEMBLY (BU-5BD3/M)



Ref. No.	Part No.	Description	Remark
⚠ 201	8-848-144-11	DEVICE, OPTICAL KSS-240A	
202	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
203	4-917-567-01	GEAR (M)	
205	4-917-565-01	SHAFT, SLED	
206	4-917-564-01	GEAR (P), FLATNESS	
* 207	A-4617-908-A	BD BOARD, COMPLETE	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

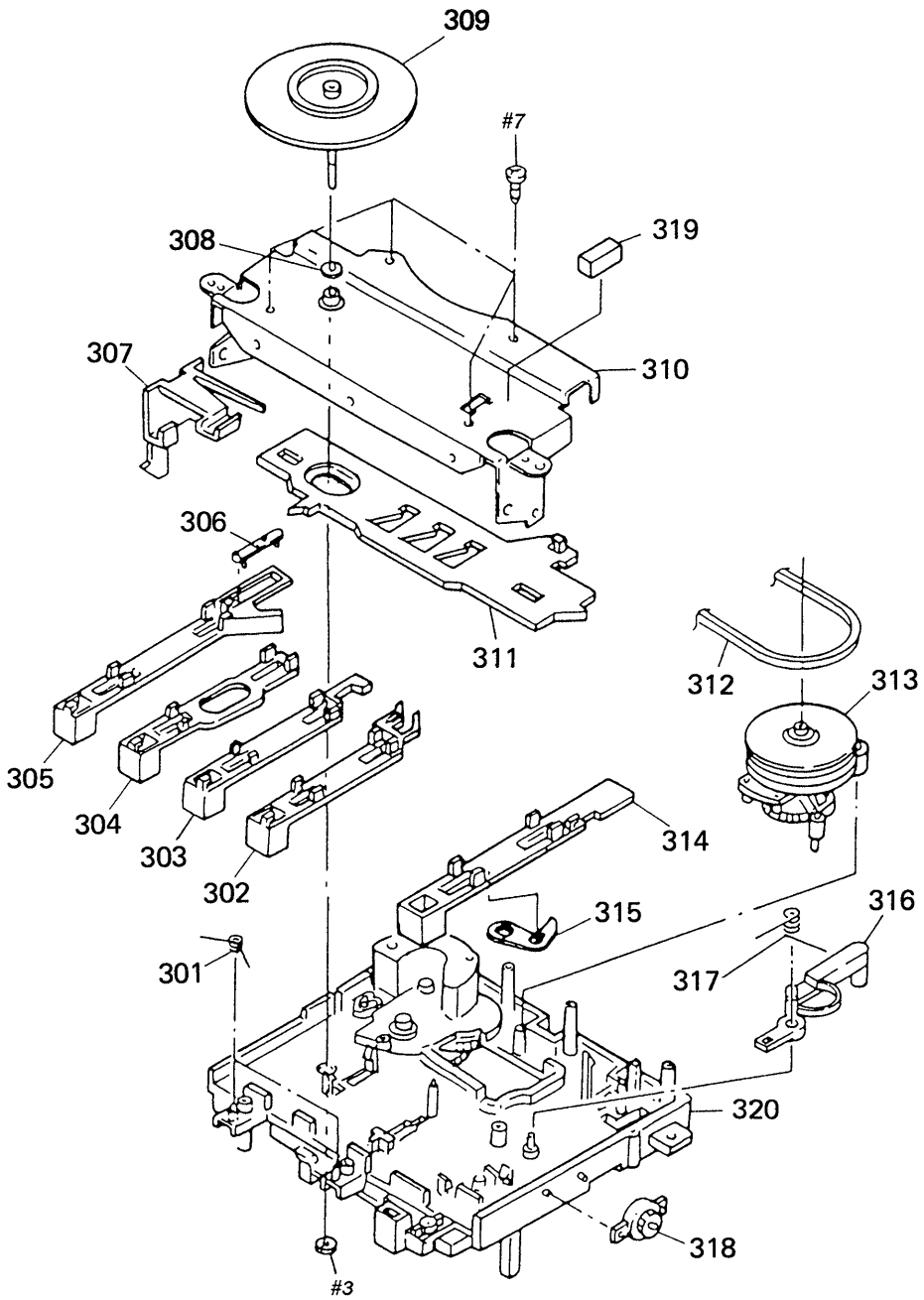
(6) MECHANISM SECTION-1 (TCM-180VW-H9)



Ref. No.	Part No.	Description	Remark
251	3-358-287-01	SPRING (LOADING A), TORSION	
252	3-358-229-01	SPRING (LOADING), TORSION	
253	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF	
254	3-358-266-02	HOLDER, CASSETTE	
255	3-371-917-01	SHAFT (BUTTON SHAFT 4)	
256	3-369-335-01	LEVER (BUTTON BASE F)	
* 257	1-640-702-11	LEAF SW (A) BOARD	
* 258	3-358-289-01	SPACER (VIBRATION PROOF MAT)	
259	3-358-203-01	LEVER (TRIGGER)	
260	3-358-202-01	SLIDER (TRIGGER)	
* 261	3-363-930-01	BRACKET (JOINT BASE)	
262	3-358-230-01	BELT (A1)	

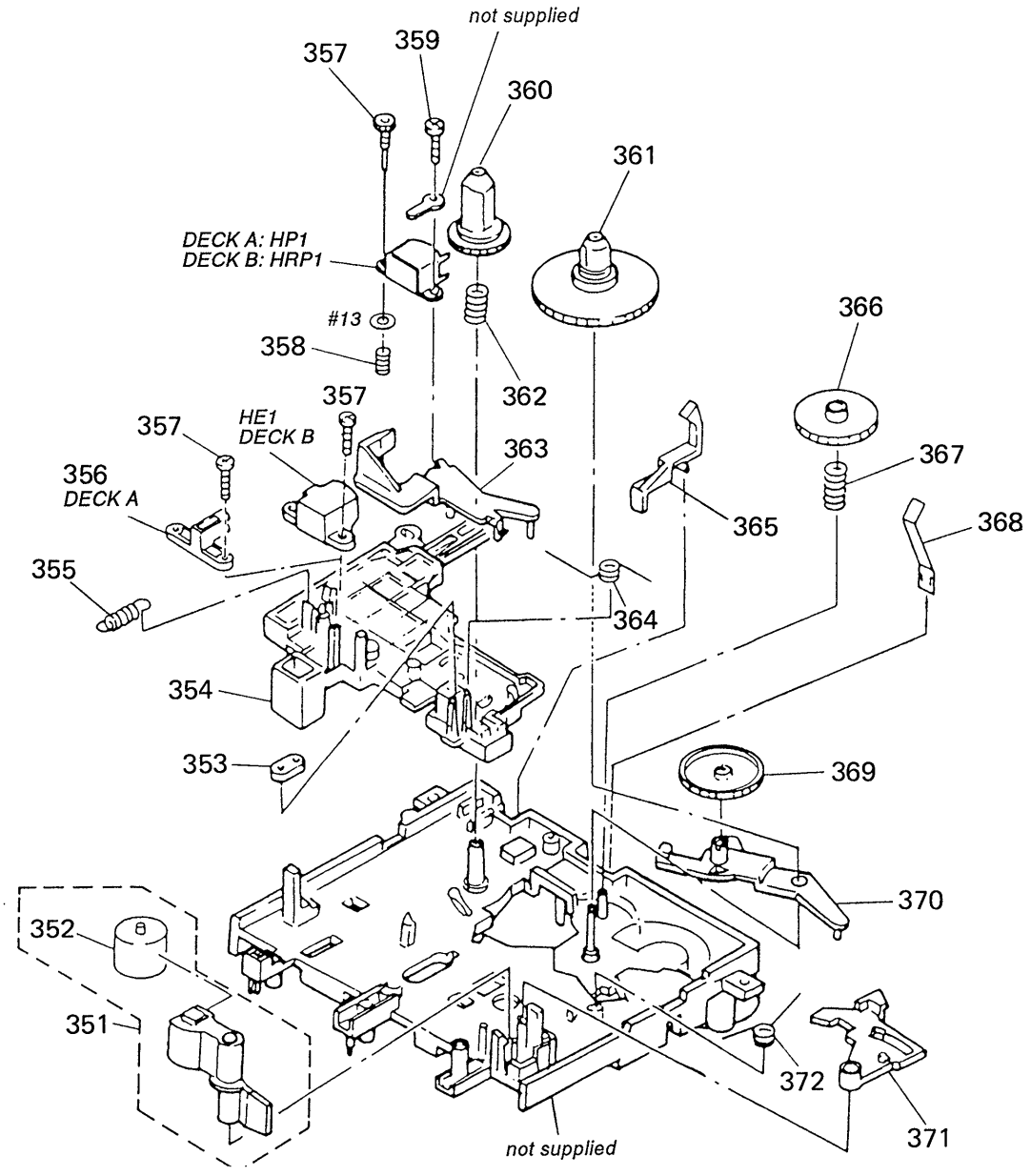
Ref. No.	Part No.	Description	Remark
263	3-364-777-01	BELT (WH)	
* 264	1-640-703-11	LEAF SW (B) BOARD	
265	4-951-620-01	SCREW (2.6X8), +BVTP	
* CN415	1-564-497-11	PIN, CONNECTOR 4P	
* CN416	1-564-498-11	PIN, CONNECTOR 5P	
M1	X-3362-377-1	MOTOR (WH) ASSY	
S1	1-571-736-11	SWITCH, LEAF (MOTOR)	
S2	1-571-736-11	SWITCH, LEAF (FWD)	
S3	1-571-736-11	SWITCH, LEAF (REC)	
S4	1-571-736-11	SWITCH, LEAF (MOTOR)	
S5	1-571-736-11	SWITCH, LEAF (FWD)	

(7) MECHANISM SECTION-2 (TCM-180VW-H9)



Ref. No.	Part No.	Description	Remark
301	3-358-232-01	SPRING (S-P F-R), TORSION	
302	3-358-258-01	SLIDER (REW)	
303	3-358-257-01	SLIDER (FF)	
304	3-358-256-01	SLIDER (STOP/EJECT)	
305	3-358-260-01	SLIDER (PAUSE)	
* 306	3-358-226-01	LEVER (PAUSE LEVER)	
* 307	3-358-261-02	SLIDER (HOLDER LOCK)	
308	3-701-437-01	WASHER	
309	X-3358-205-1	FLYWHEEL (A) ASSY (DECK A)	
309	X-3358-206-1	FLYWHEEL (B) ASSY (DECK B)	
* 310	X-3358-208-1	BRACKET (B) ASSY	
* 311	3-358-249-01	SLIDER (LOCK PLATE)	
312	3-358-232-01	SPRING (S-P F-R), TORSION	
313	X-3358-202-1	LEVER (FR ARM) ASSY	
314	3-358-259-01	SLIDER (REC)	
* 315	3-358-204-01	LEVER (REC SAFETY) (DECK B)	
316	3-358-286-01	LEVER (MOTOR LEVER)	
317	3-358-214-01	SPRING (LOCK), TORSION (DECK A)	
317	3-358-233-01	SPRING (REC-LOCK), TORSION	
318	3-319-224-51	DAMPER, SMALL	
* 319	3-358-289-01	SPACER (VIBRATION PROOF MAT)	
320	X-3358-207-2	CHASSIS (A) ASSY	

(8) MECHANISM SECTION-3 (TCM-180VW-H9)



Ref. No.	Part No.	Description	Remark
351	X-3358-204-1	LEVER (PINCH LEVER) ASSY	
352	3-578-143-11	PINCH ROLLER	
* 353	3-358-215-01	BUSHING (WIRE KIT RETAINER)	
354	3-358-265-01	SLIDER (HEAD PC BOARD A)	
355	3-358-217-01	SPRING, TENSION	
* 356	3-363-931-01	GUIDE, TAPE (DECK B)	
357	3-358-288-11	SCREW (T), AZIMUTH	
358	3-358-234-01	SPRING (AZIMUTH), COMPRESSION	
359	3-358-288-01	SCREW (T), AZIMUTH	
360	3-358-248-01	GEAR (SUPPLY REEL)	
361	X-3358-203-1	TABLE (T) ASSY, REEL	
362	3-358-208-01	SPRING (SUPPLY), COMPRESSION	
* 363	3-358-251-01	LEVER (TENSION DETECTION ARM)	

Ref. No.	Part No.	Description	Remark
364	3-358-228-01	SPRING, TORSION	
* 365	3-358-255-01	LEVER (GB LEVER)	
* 366	3-358-224-01	GEAR (FF GEAR)	
367	3-358-207-01	SPRING (FF GEAR), COMPRESSION	
368	3-358-227-01	SPRING, LEAF	
* 369	3-358-284-01	GEAR (TU GEAR)	
* 370	3-358-252-01	LEVER (TU ARM)	
* 371	3-358-253-01	LEVER (SHUT-OFF LEVER)	
372	3-358-243-01	SPRING (TU-SHUT), TORSION	
HE1	1-543-673-11	HEAD, MAGNETIC (ERASE) (DECK B)	
HP1	1-543-319-11	HEAD, MAGNETIC (REC/PB) (DECK A)	
HRP1	1-543-319-11	HEAD, MAGNETIC (REC/PB) (DECK B)	

SECTION 5
ELECTRICAL PARTS LIST

BD

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Abbreviation
  IT: Italian model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
*	A-4617-908-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C102	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C103	1-126-163-11	ELECT	4.7uF	20%	50V
C104	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C105	1-126-154-11	ELECT	47uF	20%	6.3V
C106	1-126-154-11	ELECT	47uF	20%	6.3V
C107	1-126-154-11	ELECT	47uF	20%	6.3V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-131-367-00	TANTALUM	22uF	10%	20V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C114	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C115	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C117	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C119	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C120	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C151	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C152	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C153	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C154	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C155	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-568-796-11	SOCKET, CONNECTOR 22P			
CN102	1-568-795-11	SOCKET, CONNECTOR 12P			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC101	8-752-058-77	IC CXA1372AQ			
IC102	8-759-822-36	IC LA6532M			
		< JACK >			
J101	1-216-295-00	METAL CHIP	0	5%	1/10W
J102	1-216-295-00	METAL CHIP	0	5%	1/10W
		< MOTOR >			
M101	X-4917-504-1	MOTOR ASSY (SLED)			
		< TRANSISTOR >			
Q101	8-729-901-01	TRANSISTOR DTC144EK			
		< RESISTOR >			
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W
R102	1-216-095-00	METAL CHIP	82K	5%	1/10W
R103	1-216-091-00	METAL CHIP	56K	5%	1/10W
R104	1-216-099-00	METAL CHIP	120K	5%	1/10W
R105	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R108	1-216-105-00	METAL CHIP	220K	5%	1/10W
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R110	1-216-049-00	METAL CHIP	1K	5%	1/10W
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R114	1-216-105-00	METAL CHIP	220K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W
R157	1-216-079-00	METAL CHIP	18K	5%	1/10W
R158	1-216-079-00	METAL CHIP	18K	5%	1/10W
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R171	1-216-001-00	METAL CHIP	10	5%	1/10W
R172	1-216-001-00	METAL CHIP	10	5%	1/10W
R173	1-216-001-00	METAL CHIP	10	5%	1/10W
R174	1-216-001-00	METAL CHIP	10	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-238-016-11	RES, ADJ, CARBON 10K			
RV102	1-238-016-11	RES, ADJ, CARBON 10K			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
**********					
*	1-640-702-11	LEAF SW (A) BOARD			
		**********			
		< CAPACITOR >			
C544	1-164-159-11	CERAMIC	0.1MF		50V
		< CONNECTOR >			
* CN415	1-564-497-11	PIN, CONNECTOR 4P			
		< SWITCH >			
S4	1-571-736-11	SWITCH, LEAF (MOTOR)			
S5	1-571-736-11	SWITCH, LEAF (FWD)			
**********					
*	1-640-703-11	LEAF SW (B) BOARD			
		**********			
		< CAPACITOR >			
C545	1-164-159-11	CERAMIC	0.1MF		50V
		< CONNECTOR >			
* CN416	1-564-498-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S1	1-571-736-11	SWITCH, LEAF (MOTOR)			
S2	1-571-736-11	SWITCH, LEAF (FWD)			
S3	1-571-736-11	SWITCH, LEAF (REC)			
**********					
*	1-639-288-11	LOADING MOTOR BOARD			
		**********			
		< CAPACITOR >			
C705	1-161-375-00	CERAMIC	0.0022uF	20%	50V

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D701	8-719-970-19	DIODE GP1A521			
		< MOTOR >			
M702	A-4604-847-A	MOTOR ASSY, LOADING			
**********					
*	A-4356-565-A	MAIN BOARD, COMPLETE (AEP, E, IT)			
		**********			
*	A-4356-613-A	MAIN BOARD, COMPLETE (UK)			
		**********			
*	A-4365-631-A	MAIN BOARD, COMPLETE (US, Canadian)			
		**********			
	7-685-646-79	SCREW +BVTP	3X8	TYPE2 N-S	
		< CAPACITOR >			
C501	1-124-477-11	ELECT	47uF	20%	25V
C502	1-164-159-11	CERAMIC	0.1uF		50V
C503	1-164-159-11	CERAMIC	0.1uF		50V
C504	1-164-159-11	CERAMIC	0.1uF		50V
C511	1-136-161-00	FILM	0.047uF	5%	50V
C512	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C513	1-161-494-00	CERAMIC	0.022uF		25V
C514	1-162-306-11	CERAMIC	0.01uF	20%	16V
C515	1-124-902-00	ELECT	0.47uF	20%	50V
C516	1-161-494-00	CERAMIC	0.022uF		25V
C531	1-124-635-00	ELECT	220uF	20%	6.3V
C537	1-126-177-11	ELECT	100uF	20%	10V
C539	1-164-159-11	CERAMIC	0.1uF		50V
C542	1-124-635-00	ELECT	220uF	20%	6.3V
C543	1-164-159-11	CERAMIC	0.1uF		50V
C549	1-164-159-11	CERAMIC	0.1uF		50V
C550	1-124-635-00	ELECT	220uF	20%	6.3V
C551	1-164-159-11	CERAMIC	0.1uF		50V
C553	1-162-195-31	CERAMIC	4.7PF	10%	50V
C554	1-162-195-31	CERAMIC	4.7PF	10%	50V
C557	1-126-177-11	ELECT	100uF	20%	10V
C558	1-164-159-11	CERAMIC	0.1uF		50V
C601	1-124-472-11	ELECT	470uF	20%	10V
C602	1-164-159-11	CERAMIC	0.1uF		50V
C603	1-124-478-11	ELECT	100uF	20%	25V
C604	1-124-478-11	ELECT	100uF	20%	25V
C608	1-164-159-11	CERAMIC	0.1uF		50V
C609	1-164-159-11	CERAMIC	0.1uF		50V
C614	1-164-159-11	CERAMIC	0.1uF		50V
C622	1-161-494-00	CERAMIC	0.022uF		25V
C626	1-162-294-31	CERAMIC	0.001uF	10%	50V
C627	1-162-294-31	CERAMIC	0.001uF	10%	50V
C628	1-162-294-31	CERAMIC	0.001uF	10%	50V
C630	1-162-294-31	CERAMIC	0.001uF	10%	50V
C631	1-162-294-31	CERAMIC	0.001uF	10%	50V
C632	1-162-294-31	CERAMIC	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remark
C661	1-162-283-31	CERAMIC	120PF	10%	50V
C663	1-162-282-31	CERAMIC	100PF	10%	50V
C664	1-162-282-31	CERAMIC	100PF	10%	50V
C665	1-162-282-31	CERAMIC	100PF	10%	50V
C666	1-162-282-31	CERAMIC	100PF	10%	50V
C667	1-162-283-31	CERAMIC	120PF	10%	50V
C668	1-124-907-11	ELECT	10uF	20%	50V
C669	1-124-907-11	ELECT	10uF	20%	50V
C671	1-130-480-00	MYLAR	0.0056uF	5%	50V
C672	1-130-480-00	MYLAR	0.0056uF	5%	50V
C673	1-130-471-00	MYLAR	0.001uF	5%	50V
C674	1-130-471-00	MYLAR	0.001uF	5%	50V
C675	1-126-176-11	ELECT	220uF	20%	10V
C676	1-126-176-11	ELECT	220uF	20%	10V
C677	1-124-477-11	ELECT	47uF	20%	25V
C678	1-124-477-11	ELECT	47uF	20%	25V
C679	1-164-159-11	CERAMIC	0.1uF		50V
C680	1-164-159-11	CERAMIC	0.1uF		50V
C681	1-164-159-11	CERAMIC	0.1uF		50V
C688	1-161-494-00	CERAMIC	0.022uF		25V
C690	1-161-494-00	CERAMIC	0.022uF		25V
C800	1-124-563-11	ELECT	2200uF	20%	25V
C801	1-126-176-11	ELECT	220uF	20%	10V
C802	1-124-572-11	ELECT	100uF	20%	63V
C803	1-124-907-11	ELECT	10uF	20%	50V
C804	1-128-548-11	ELECT	4700uF	20%	25V
C805	1-128-548-11	ELECT	4700uF	20%	25V
C806	1-164-159-11	CERAMIC	0.1uF		50V
C807	1-124-907-11	ELECT	10uF	20%	50V
C808	1-124-472-11	ELECT	470uF	20%	10V
C809	1-124-472-11	ELECT	470uF	20%	10V
C811	1-124-443-00	ELECT	100uF	20%	10V
C813	1-164-159-11	CERAMIC	0.1uF		50V
C815	1-124-927-11	ELECT	4.7uF	20%	100V
C816	1-124-907-11	ELECT	10uF	20%	50V
C817	1-124-443-00	ELECT	100uF	20%	10V
C822	1-164-159-11	CERAMIC	0.1uF		50V
C823	1-164-159-11	CERAMIC	0.1uF		50V
C833	1-124-916-11	ELECT	22uF	20%	63V
C888	1-124-907-11	ELECT	10uF	20%	50V
C901	1-162-286-31	CERAMIC	220PF	10%	50V
C902	1-162-286-31	CERAMIC	220PF	10%	50V
C903	1-130-467-00	MYLAR	470PF	5%	50V
C904	1-130-467-00	MYLAR	470PF	5%	50V
C911	1-162-294-31	CERAMIC	0.001uF	10%	50V
C912	1-164-159-11	CERAMIC	0.1uF		50V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN421	1-568-955-11	PIN, CONNECTOR 6P	
* CN601	1-691-902-21	CONNECTOR, FFC/FPC 37P	
* CN603	1-568-824-11	SOCKET, CONNECTOR 5P	
* CN604	1-568-943-11	PIN, CONNECTOR 5P	
CN605	1-691-895-21	CONNECTOR, FFC/FPC 18P	
* CN652	1-564-524-11	PLUG, CONNECTOR 9P	
* CN653	1-564-520-11	PLUG, CONNECTOR 5P	
* CN655	1-565-291-11	SOCKET, CONNECTOR 13P (SYSTEM CONTROL)	
		< DIODE >	
D601	8-719-987-63	DIODE 1N4148M	
D801	8-719-200-82	DIODE 11ES2	
D802	8-719-933-50	DIODE HZS7C2L	
D808	8-719-000-75	DIODE UZL-7L1	
D810	8-719-010-12	DIODE UZ-2.7BS	
D811	8-719-000-75	DIODE UZL-7L1	
D841	8-719-500-36	DIODE D2SB20	
		< FERRITE BEAD >	
FB601	1-412-473-21	INDUCTOR 0UH	
FB602	1-412-473-21	INDUCTOR 0UH	
FB603	1-412-473-21	INDUCTOR 0UH	
FB604	1-412-473-21	INDUCTOR 0UH	
FB605	1-412-473-21	INDUCTOR 0UH	
FB606	1-412-473-21	INDUCTOR 0UH	
FB607	1-412-473-21	INDUCTOR 0UH	
FB901	1-412-473-21	INDUCTOR 0UH	
		< IC >	
IC501	8-752-838-85	IC CXP50120-024Q	
IC502	8-752-352-93	IC CXD2500BQ	
IC503	8-759-821-32	IC CXA-1291P	
IC504	8-752-355-45	IC CXD2565M	
IC505	8-759-634-51	IC M5218AP	
IC506	8-759-634-51	IC M5218AP	
IC507	8-759-000-49	IC MC14066BCP	
IC801	8-759-071-48	IC TA7807S	
IC802	8-759-633-42	IC M5293L	
IC803	8-759-630-21	IC M5290P-16	
		< COIL >	
L501	1-408-417-00	INDUCTOR 47uH	

MAIN

Ref. No.	Part No.	Description			Remark
		< IC LINK >			
⚠PS601	1-532-637-00	LINK, IC 1.0A (AEP, UK, E, IT)			
⚠PS602	1-532-685-00	LINK, IC (AEP, UK, E, IT)			
		< TRANSISTOR >			
Q541	8-729-900-65	TRANSISTOR DTA144ES			
Q542	8-729-900-65	TRANSISTOR DTA144ES			
Q543	8-729-900-65	TRANSISTOR DTA144ES			
Q601	8-729-900-89	TRANSISTOR DTC144ES			
Q673	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q674	8-729-141-30	TRANSISTOR 2SC3623A-LK			
Q675	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q676	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q677	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q678	8-729-900-89	TRANSISTOR DTC144ES			
Q679	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q802	8-729-140-96	TRANSISTOR 2SD774-34			
Q803	8-729-141-83	TRANSISTOR 2SB1094-LK			
Q809	8-729-119-76	TRANSISTOR 2SA1175-HFE			
		< RESISTOR >			
R501	1-249-420-11	CARBON	1.8K	5%	1/4W F
R502	1-249-417-11	CARBON	1K	5%	1/4W F
R503	1-249-417-11	CARBON	1K	5%	1/4W F
R504	1-249-417-11	CARBON	1K	5%	1/4W F
R511	1-249-423-11	CARBON	3.3K	5%	1/4W F
R512	1-249-429-11	CARBON	10K	5%	1/4W
R513	1-249-423-11	CARBON	3.3K	5%	1/4W F
R514	1-249-429-11	CARBON	10K	5%	1/4W
R515	1-249-417-11	CARBON	1K	5%	1/4W F
R516	1-249-417-11	CARBON	1K	5%	1/4W F
R517	1-249-420-11	CARBON	1.8K	5%	1/4W F
R518	1-249-441-11	CARBON	100K	5%	1/4W
R531	1-249-417-11	CARBON	1K	5%	1/4W F
R539	1-249-425-11	CARBON	4.7K	5%	1/4W F
R541	1-249-405-11	CARBON	100	5%	1/4W F
R543	1-249-441-11	CARBON	100K	5%	1/4W
R544	1-249-441-11	CARBON	100K	5%	1/4W
R547	1-249-441-11	CARBON	100K	5%	1/4W
R601	1-249-433-11	CARBON	22K	5%	1/4W
R602	1-249-433-11	CARBON	22K	5%	1/4W
R603	1-249-433-11	CARBON	22K	5%	1/4W
R604	1-249-425-11	CARBON	4.7K	5%	1/4W F
R605	1-249-425-11	CARBON	4.7K	5%	1/4W F
R606	1-249-425-11	CARBON	4.7K	5%	1/4W F
R608	1-249-441-11	CARBON	100K	5%	1/4W
R609	1-249-440-11	CARBON	82K	5%	1/4W
R610	1-247-874-11	CARBON	62K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R611	1-249-435-11	CARBON	33K	5%	1/4W
R612	1-247-878-00	CARBON	91K	5%	1/4W
R613	1-247-864-11	CARBON	24K	5%	1/4W
R614	1-247-880-11	CARBON	110K	5%	1/4W
R615	1-249-440-11	CARBON	82K	5%	1/4W
R616	1-247-876-11	CARBON	75K	5%	1/4W
R621	1-249-393-11	CARBON	10	5%	1/4W F
R622	1-249-393-11	CARBON	10	5%	1/4W F
R625	1-249-429-11	CARBON	10K	5%	1/4W
R626	1-249-429-11	CARBON	10K	5%	1/4W
R627	1-249-429-11	CARBON	10K	5%	1/4W
R628	1-249-429-11	CARBON	10K	5%	1/4W
R629	1-249-429-11	CARBON	10K	5%	1/4W
R630	1-249-429-11	CARBON	10K	5%	1/4W
R631	1-249-429-11	CARBON	10K	5%	1/4W
R632	1-249-429-11	CARBON	10K	5%	1/4W
R645	1-249-425-11	CARBON	4.7K	5%	1/4W F
R646	1-249-425-11	CARBON	4.7K	5%	1/4W F
R652	1-249-433-11	CARBON	22K	5%	1/4W
R653	1-249-433-11	CARBON	22K	5%	1/4W
R655	1-249-433-11	CARBON	22K	5%	1/4W
R656	1-249-433-11	CARBON	22K	5%	1/4W
R661	1-247-862-11	CARBON	20K	5%	1/4W
R662	1-247-862-11	CARBON	20K	5%	1/4W
R663	1-247-862-11	CARBON	20K	5%	1/4W
R664	1-247-862-11	CARBON	20K	5%	1/4W
R665	1-249-433-11	CARBON	22K	5%	1/4W
R666	1-249-433-11	CARBON	22K	5%	1/4W
R667	1-249-433-11	CARBON	22K	5%	1/4W
R668	1-249-433-11	CARBON	22K	5%	1/4W
R669	1-249-419-11	CARBON	1.5K	5%	1/4W F
R670	1-249-419-11	CARBON	1.5K	5%	1/4W F
R671	1-249-419-11	CARBON	1.5K	5%	1/4W F
R672	1-249-419-11	CARBON	1.5K	5%	1/4W F
R675	1-249-421-11	CARBON	2.2K	5%	1/4W F
R676	1-249-421-11	CARBON	2.2K	5%	1/4W F
R677	1-249-441-11	CARBON	100K	5%	1/4W
R678	1-249-441-11	CARBON	100K	5%	1/4W
R681	1-249-425-11	CARBON	4.7K	5%	1/4W F
R682	1-249-425-11	CARBON	4.7K	5%	1/4W F
R683	1-249-409-11	CARBON	220	5%	1/4W F
R684	1-249-409-11	CARBON	220	5%	1/4W F
R690	1-249-429-11	CARBON	10K	5%	1/4W
R691	1-249-417-11	CARBON	1K	5%	1/4W F
R692	1-249-429-11	CARBON	10K	5%	1/4W
R693	1-249-433-11	CARBON	22K	5%	1/4W
R694	1-249-393-11	CARBON	10	5%	1/4W F
R695	1-249-433-11	CARBON	22K	5%	1/4W
R696	1-249-433-11	CARBON	22K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description				Remark
R697	1-249-433-11	CARBON	22K	5%	1/4W	
R755	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R756	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R757	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R758	1-249-432-11	CARBON	18K	5%	1/4W	
R759	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R760	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R761	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R762	1-249-432-11	CARBON	18K	5%	1/4W	
R766	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R767	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R768	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R769	1-249-432-11	CARBON	18K	5%	1/4W	
R801	1-249-435-11	CARBON	33K	5%	1/4W	
R813	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R814	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R815	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R819	1-249-410-11	CARBON	270	5%	1/4W	F
R820	1-249-438-11	CARBON	56K	5%	1/4W	
R821	1-249-429-11	CARBON	10K	5%	1/4W	
R826	1-249-417-11	CARBON	1K	5%	1/4W	F
R827	1-249-410-11	CARBON	270	5%	1/4W	F
R852	1-249-429-11	CARBON	10K	5%	1/4W	

< VIBRATOR >

X501 1-579-833-21 VIBRATOR, CRYSTAL (33MHz)

****

1-638-731-11 OPEN/UP SW BOARD
****

< CONNECTOR >

* CN705 1-566-214-11 PIN, CONNECTOR (PC BOARD) 2P

< SWITCH >

S702 1-571-300-21 SWITCH, ROTARY (OPEN/UP)

****

* 1-646-432-11 PANEL-B BOARD
****

* 4-955-792-01 HOLDER (5M), FL TUBE

< CONNECTOR >

* CN750 1-691-902-21 CONNECTOR, FFC/FPC 37P

< FILTER >

FL701 1-519-721-31 INDICATOR TUBE, FLUORESCENT

< RESISTOR >

Ref.No.	Part No.	Description				Remark
R751	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R752	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R753	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R754	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R763	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R764	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R765	1-249-427-11	CARBON	6.8K	5%	1/4W	F

< SWITCH >

S750 1-554-303-21 SWITCH, TACTILE (EDIT/TIME FADE)
S751 1-554-303-21 SWITCH, TACTILE (CHECK)
S752 1-554-303-21 SWITCH, TACTILE (CLEAR)
S753 1-554-303-21 SWITCH, TACTILE (FADER)
S754 1-554-303-21 SWITCH, TACTILE (MUSIC SCAN)

S755 1-554-303-21 SWITCH, TACTILE (REPEAT)
S765 1-554-303-21 SWITCH, TACTILE (PLAY MODE:PROGRAM)
S766 1-554-303-21 SWITCH, TACTILE (PLAY MODE:SHUFFLE)
S767 1-554-303-21 SWITCH, TACTILE (PLAY MODE:CONTINUE)
S780 1-554-303-21 SWITCH, TACTILE (TIME)

****

* 1-646-431-11 PANEL-U BOARD
****

< CONNECTOR >

CN752 1-506-469-11 PIN, CONNECTOR 4P

< SWITCH >

S756 1-554-303-21 SWITCH, TACTILE (AMS:⏮)
S757 1-554-303-21 SWITCH, TACTILE (AMS:⏭)
S758 1-554-303-21 SWITCH, TACTILE (◀◀)
S759 1-554-303-21 SWITCH, TACTILE (▶▶)
S760 1-554-303-21 SWITCH, TACTILE (⏏ OPEN/CLOSE)

S761 1-554-303-21 SWITCH, TACTILE (▷)
S762 1-554-303-21 SWITCH, TACTILE (❚❚)
S763 1-554-303-21 SWITCH, TACTILE (■)
S764 1-554-303-21 SWITCH, TACTILE (DISC SKIP)
S768 1-554-303-21 SWITCH, TACTILE (DISC 5)

S769 1-554-303-21 SWITCH, TACTILE (DISC 4)
S770 1-554-303-21 SWITCH, TACTILE (DISC 3)
S771 1-554-303-21 SWITCH, TACTILE (DISC 2)
S772 1-554-303-21 SWITCH, TACTILE (DISC 1)

****

SWITCH BOARD
****

< RESISTOR >

R481	1-249-427-11	CARBON	6.8K	5%	1/4W	F (E)
R482	1-249-421-11	CARBON	2.2K	5%	1/4W	F (E)

< SWITCH >

S401 1-692-354-11 SWITCH, PUSH (3 KEY)
(TAPE SELECT/DUBBING SPEED/DOLBY NR)
(US, Canadian, AEP, AE2, UK, IT)
S401 1-692-355-11 SWITCH, PUSH (2 KEY)
(TAPE SELECT/DUBBING SPEED) (E)

****

1-638-729-11 TABLE MOTOR BOARD
****

< CAPACITOR >

C704	1-161-375-00	CERAMIC	0.0022uF		20%	50V

TABLE MOTOR | TC MAIN

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
* CN707	1-573-044-11	SOCKET, CONNECTOR 5P			
		< MOTOR >			
M701	A-4604-849-A	MOTOR ASSY, ROTARY			
		< RESISTOR >			
R701	1-249-416-11	CARBON	820	5% 1/4W F	
**********					
*	A-4360-825-A	TC MAIN BOARD, COMPLETE (E)			
		**********			
		< CAPACITOR >			
C400	1-162-289-31	CERAMIC	390PF	10%	50V
C401	1-136-157-00	FILM	0.022uF	5%	50V
C402	1-124-767-00	ELECT	2.2uF	20%	50V
C403	1-124-443-00	ELECT	100uF	20%	10V
C404	1-162-289-31	CERAMIC	390PF	10%	50V
C405	1-136-157-00	FILM	0.022uF	5%	50V
C406	1-124-767-00	ELECT	2.2uF	20%	50V
C407	1-124-443-00	ELECT	100uF	20%	10V
C408	1-137-368-11	FILM	0.0047uF	5%	50V
C409	1-162-289-31	CERAMIC	390PF	10%	50V
C411	1-124-925-11	ELECT	2.2uF	20%	100V
C416	1-124-927-11	ELECT	4.7uF	20%	100V
C419	1-124-907-11	ELECT	10uF	20%	50V
C420	1-124-907-11	ELECT	10uF	20%	50V
C421	1-162-284-31	CERAMIC	150PF	10%	50V
C422	1-101-890-00	CERAMIC	75PF	5%	50V
C423	1-101-884-00	CERAMIC	56PF	5%	50V
C424	1-102-527-11	CERAMIC	82PF	5%	50V
C441	1-162-282-31	CERAMIC	100PF	10%	50V
C442	1-164-159-11	CERAMIC	0.1uF		50V
C443	1-124-903-11	ELECT	1uF	20%	50V
C446	1-162-282-31	CERAMIC	100PF	10%	50V
C461	1-124-925-11	ELECT	2.2uF	20%	100V
C462	1-124-443-00	ELECT	100uF	20%	10V
C500	1-162-289-31	CERAMIC	390PF	10%	50V
C501	1-136-157-00	FILM	0.022uF	5%	50V
C502	1-124-767-00	ELECT	2.2uF	20%	50V
C503	1-124-443-00	ELECT	100uF	20%	10V
C504	1-162-289-31	CERAMIC	390PF	10%	50V
C505	1-136-157-00	FILM	0.022uF	5%	50V
C506	1-124-767-00	ELECT	2.2uF	20%	50V
C507	1-124-443-00	ELECT	100uF	20%	10V
C508	1-137-368-11	FILM	0.0047uF	5%	50V
C509	1-162-289-31	CERAMIC	390PF	10%	50V
C511	1-124-925-11	ELECT	2.2uF	20%	100V
C516	1-124-927-11	ELECT	4.7uF	20%	100V
C520	1-124-907-11	ELECT	10uF	20%	50V
C521	1-162-284-31	CERAMIC	150PF	10%	50V
C522	1-101-890-00	CERAMIC	75PF	5%	50V
C523	1-101-884-00	CERAMIC	56PF	5%	50V
C524	1-102-527-11	CERAMIC	82PF	5%	50V
C525	1-137-438-11	FILM	0.0082uF	5%	50V
C526	1-137-438-11	FILM	0.0082uF	5%	50V
C527	1-124-925-11	ELECT	2.2uF	20%	100V
C528	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C529	1-137-436-11	FILM	0.0039uF	5%	50V
C530	1-137-436-11	FILM	0.0039uF	5%	50V
C531	1-124-902-00	ELECT	0.47uF	20%	50V
C532	1-124-925-11	ELECT	2.2uF	20%	100V
C533	1-126-768-11	ELECT	2200uF	20%	16V
C534	1-124-120-11	ELECT	220uF	20%	25V
C535	1-124-927-11	ELECT	4.7uF	20%	100V
C536	1-124-907-11	ELECT	10uF	20%	50V
C541	1-162-282-31	CERAMIC	100PF	10%	50V
C542	1-164-159-11	CERAMIC	0.1uF		50V
C546	1-162-282-31	CERAMIC	100PF	10%	50V
C561	1-124-925-11	ELECT	2.2uF	20%	100V
C562	1-124-443-00	ELECT	100uF	20%	10V
C570	1-136-165-00	FILM	0.1uF	5%	50V
C571	1-136-165-00	FILM	0.1uF	5%	50V
C572	1-124-472-11	ELECT	470uF	20%	10V
C573	1-124-472-11	ELECT	470uF	20%	10V
		< CONNECTOR >			
* CN400	1-564-506-11	PLUG, CONNECTOR 3P			
* CN401	1-564-509-11	PLUG, CONNECTOR 6P			
* CN402	1-564-505-11	PLUG, CONNECTOR 2P			
* CN407	1-560-060-00	PIN, CONNECTOR 2P			
* CN410	1-564-507-11	PLUG, CONNECTOR 4P			
* CN411	1-564-508-11	PLUG, CONNECTOR 5P			
* CN412	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
		< DIODE >			
D500	8-719-987-63	DIODE 1N4148M			
D501	8-719-987-63	DIODE 1N4148M			
D502	8-719-987-63	DIODE 1N4148M			
D503	8-719-987-63	DIODE 1N4148M			
D504	8-719-987-63	DIODE 1N4148M			
D505	8-719-987-63	DIODE 1N4148M			
D507	8-719-987-63	DIODE 1N4148M			
D508	8-719-987-63	DIODE 1N4148M			
D509	8-719-987-63	DIODE 1N4148M			
D510	8-719-987-63	DIODE 1N4148M			
D511	8-719-987-63	DIODE 1N4148M			
D512	8-719-987-63	DIODE 1N4148M			

Ref. No.	Part No.	Description	Remark
		< IC >	
IC400	8-759-111-44	IC uPC4570C-1	
IC401	8-759-111-44	IC uPC4570C-1	
IC402	8-759-000-49	IC uPD4066BC	
IC404	8-752-055-62	IC CXA1579P	
IC461	8-759-634-51	IC M5218AP	
IC501	8-759-140-11	IC uPD4011BC	
IC502	8-759-040-01	IC MC14001BCP	
IC503	8-759-140-11	IC uPD4011BC	
IC515	8-759-605-00	IC M5F78M07	
IC516	8-759-604-95	IC M5F79M07	
		< COIL >	
L400	1-410-780-11	INDUCTOR 27mH	
L500	1-410-780-11	INDUCTOR 27mH	
		< TRANSISTOR >	
Q400	8-729-900-89	TRANSISTOR DTC144ES	
Q402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q500	8-729-900-89	TRANSISTOR DTC144ES	
Q502	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q504	8-729-194-57	TRANSISTOR 2SC945-P	
Q505	8-729-194-57	TRANSISTOR 2SC945-P	
Q506	8-729-281-52	TRANSISTOR 2SC1815-Y	
Q507	8-729-900-61	TRANSISTOR DTA114ES	
Q508	8-729-900-80	TRANSISTOR DTC114ES	
Q509	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q511	8-729-900-65	TRANSISTOR DTA144ES	
Q512	8-729-900-65	TRANSISTOR DTA144ES	
Q513	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q514	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q515	8-729-900-89	TRANSISTOR DTC144ES	
		< RESISTOR >	
R400	1-247-889-00	CARBON 270K 5% 1/4W	
R401	1-249-404-00	CARBON 82 5% 1/4W	
R402	1-247-881-00	CARBON 120K 5% 1/4W	
R403	1-247-850-11	CARBON 6.2K 5% 1/4W	
R404	1-249-409-11	CARBON 220 5% 1/4W	F
R405	1-247-889-00	CARBON 270K 5% 1/4W	
R406	1-249-404-00	CARBON 82 5% 1/4W	
R407	1-247-881-00	CARBON 120K 5% 1/4W	
R408	1-247-850-11	CARBON 6.2K 5% 1/4W	
R409	1-249-409-11	CARBON 220 5% 1/4W	F
R410	1-249-430-11	CARBON 12K 5% 1/4W	
R411	1-249-431-11	CARBON 15K 5% 1/4W	
R412	1-247-887-00	CARBON 220K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R417	1-249-426-11	CARBON 5.6K 5% 1/4W	
R419	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R420	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R421	1-249-429-11	CARBON 10K 5% 1/4W	
R422	1-249-417-11	CARBON 1K 5% 1/4W	F
R423	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R425	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R427	1-249-433-11	CARBON 22K 5% 1/4W	
R428	1-215-455-00	METAL 27K 1% 1/6W	
R429	1-249-430-11	CARBON 12K 5% 1/4W	
R431	1-249-429-11	CARBON 10K 5% 1/4W	
R461	1-249-437-11	CARBON 47K 5% 1/4W	
R462	1-249-441-11	CARBON 100K 5% 1/4W	
R463	1-249-424-11	CARBON 3.9K 5% 1/4W	F
R464	1-249-440-11	CARBON 82K 5% 1/4W	
R473	1-249-429-11	CARBON 10K 5% 1/4W	
R474	1-249-429-11	CARBON 10K 5% 1/4W	
R475	1-249-429-11	CARBON 10K 5% 1/4W	
R476	1-249-429-11	CARBON 10K 5% 1/4W	
R477	1-249-429-11	CARBON 10K 5% 1/4W	
R478	1-249-429-11	CARBON 10K 5% 1/4W	
R479	1-249-429-11	CARBON 10K 5% 1/4W	
R480	1-249-429-11	CARBON 10K 5% 1/4W	
R491	1-249-429-11	CARBON 10K 5% 1/4W	
R500	1-247-889-00	CARBON 270K 5% 1/4W	
R501	1-249-404-00	CARBON 82 5% 1/4W	
R502	1-247-881-00	CARBON 120K 5% 1/4W	
R503	1-247-850-11	CARBON 6.2K 5% 1/4W	
R504	1-249-409-11	CARBON 220 5% 1/4W	F
R505	1-247-889-00	CARBON 270K 5% 1/4W	
R506	1-249-404-00	CARBON 82 5% 1/4W	
R507	1-247-881-00	CARBON 120K 5% 1/4W	
R508	1-247-850-11	CARBON 6.2K 5% 1/4W	
R509	1-249-409-11	CARBON 220 5% 1/4W	F
R510	1-249-430-11	CARBON 12K 5% 1/4W	
R511	1-249-431-11	CARBON 15K 5% 1/4W	
R512	1-247-887-00	CARBON 220K 5% 1/4W	
R517	1-249-426-11	CARBON 5.6K 5% 1/4W	
R519	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R520	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R521	1-249-429-11	CARBON 10K 5% 1/4W	
R522	1-249-417-11	CARBON 1K 5% 1/4W	F
R523	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R525	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R529	1-249-430-11	CARBON 12K 5% 1/4W	
R532	1-249-393-11	CARBON 10 5% 1/4W	F
R533	1-249-434-11	CARBON 27K 5% 1/4W	
R534	1-249-434-11	CARBON 27K 5% 1/4W	
R535	1-249-428-11	CARBON 8.2K 5% 1/4W	F

TC MAIN

Ref. No.	Part No.	Description				Remark
R536	1-249-417-11	CARBON	1K	5%	1/4W	F
R537	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R538	1-215-905-11	METAL OXIDE	10	5%	3W	F
R539	1-249-392-11	CARBON	8.2	5%	1/4W	F
R540	1-249-392-11	CARBON	8.2	5%	1/4W	F
R542	1-249-426-11	CARBON	5.6K	5%	1/4W	
R543	1-249-442-11	CARBON	510	5%	1/4W	
R546	1-249-435-11	CARBON	33K	5%	1/4W	
R547	1-249-427-11	CARBON	6.8K	5%	1/4W	F
R548	1-249-426-11	CARBON	5.6K	5%	1/4W	
R549	1-249-426-11	CARBON	5.6K	5%	1/4W	
R550	1-249-426-11	CARBON	5.6K	5%	1/4W	
R551	1-249-429-11	CARBON	10K	5%	1/4W	
R552	1-249-437-11	CARBON	47K	5%	1/4W	
R559	1-249-433-11	CARBON	22K	5%	1/4W	
R561	1-249-437-11	CARBON	47K	5%	1/4W	
R562	1-249-441-11	CARBON	100K	5%	1/4W	
R563	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R564	1-249-440-11	CARBON	82K	5%	1/4W	
R570	1-249-441-11	CARBON	100K	5%	1/4W	
R571	1-249-441-11	CARBON	100K	5%	1/4W	
R574	1-249-433-11	CARBON	22K	5%	1/4W	
R575	1-249-441-11	CARBON	100K	5%	1/4W	
R576	1-247-887-00	CARBON	220K	5%	1/4W	
R577	1-249-441-11	CARBON	100K	5%	1/4W	
		< VARIABLE RESISTOR >				
RV400	1-230-496-11	RES, ADJ, CARBON 10K				
RV401	1-230-496-11	RES, ADJ, CARBON 10K				
RV402	1-230-496-11	RES, ADJ, CARBON 10K				
RV403	1-230-499-11	RES, ADJ, CARBON 100K				
RV500	1-230-496-11	RES, ADJ, CARBON 10K				
RV501	1-230-496-11	RES, ADJ, CARBON 10K				
RV502	1-230-496-11	RES, ADJ, CARBON 10K				
RV503	1-230-499-11	RES, ADJ, CARBON 100K				
RV504	1-230-495-11	RES, ADJ, CARBON 2.2K				
RV505	1-230-495-11	RES, ADJ, CARBON 2.2K				
		< RELAY >				
RY400	1-515-614-11	RELAY				
**********						
*	A-4360-824-A	TC MAIN BOARD, COMPLETE (EXCEPT E)				
		**********				
*	4-942-204-01	PLATE, GROUND				
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S				
		< CAPACITOR >				
C100	1-162-282-31	CERAMIC	100PF		10%	50V
C101	1-162-290-31	CERAMIC	470PF		10%	50V
C102	1-136-157-00	FILM	0.022uF		5%	50V
C103	1-126-320-11	ELECT, NONPOLAR	10uF		20%	16V
C110	1-162-282-31	CERAMIC	100PF		10%	50V
C111	1-162-289-31	CERAMIC	390PF		10%	50V
C112	1-136-157-00	FILM	0.022uF		5%	50V
C113	1-126-320-11	ELECT, NONPOLAR	10uF		20%	16V
C121	1-137-368-11	FILM	0.0047uF		5%	50V
C122	1-124-903-11	ELECT	1uF		20%	50V
C123	1-126-791-11	ELECT	10uF		20%	35V
C124	1-136-165-00	FILM	0.1uF		5%	50V
C125	1-126-791-11	ELECT	10uF		20%	35V
C126	1-124-903-11	ELECT	1uF		20%	50V
C127	1-124-902-00	ELECT	0.47uF		20%	50V
C128	1-126-791-11	ELECT	10uF		20%	35V
C131	1-161-375-00	CERAMIC	0.0022uF		20%	50V
C132	1-162-291-31	CERAMIC	560PF		10%	50V
C151	1-102-525-11	CERAMIC	68PF		5%	50V
C152	1-102-961-00	CERAMIC	27PF		5%	50V
C153	1-101-890-00	CERAMIC	75PF		5%	50V
C154	1-162-288-31	CERAMIC	330PF		10%	50V
C200	1-162-282-31	CERAMIC	100PF		10%	50V
C201	1-162-290-31	CERAMIC	470PF		10%	50V
C202	1-136-157-00	FILM	0.022uF		5%	50V
C203	1-126-320-11	ELECT, NONPOLAR	10uF		20%	16V
C210	1-162-282-31	CERAMIC	100PF		10%	50V
C211	1-162-289-31	CERAMIC	390PF		10%	50V
C212	1-136-157-00	FILM	0.022uF		5%	50V
C213	1-126-320-11	ELECT, NONPOLAR	10uF		20%	16V
C221	1-137-368-11	FILM	0.0047uF		5%	50V
C222	1-124-903-11	ELECT	1uF		20%	50V
C223	1-126-791-11	ELECT	10uF		20%	35V
C224	1-136-165-00	FILM	0.1uF		5%	50V
C225	1-126-791-11	ELECT	10uF		20%	35V
C226	1-124-903-11	ELECT	1uF		20%	50V
C227	1-124-902-00	ELECT	0.47uF		20%	50V
C228	1-126-791-11	ELECT	10uF		20%	35V
C231	1-161-375-00	CERAMIC	0.0022uF		20%	50V
C232	1-162-291-31	CERAMIC	560PF		10%	50V
C251	1-102-525-11	CERAMIC	68PF		5%	50V
C252	1-102-961-00	CERAMIC	27PF		5%	50V
C253	1-101-890-00	CERAMIC	75PF		5%	50V
C254	1-162-288-31	CERAMIC	330PF		10%	50V
C301	1-164-159-11	CERAMIC	0.1uF			50V
C302	1-164-159-11	CERAMIC	0.1uF			50V
C303	1-126-933-11	ELECT	100uF		20%	16V
C304	1-126-933-11	ELECT	100uF		20%	16V
C305	1-126-933-11	ELECT	100uF		20%	16V
C306	1-126-933-11	ELECT	100uF		20%	16V

Ref.No.	Part No.	Description			Remark
C307	1-126-933-11	ELECT	100uF	20%	16V
C308	1-126-933-11	ELECT	100uF	20%	16V
C309	1-126-791-11	ELECT	10uF	20%	35V
C310	1-126-791-11	ELECT	10uF	20%	35V
C312	1-164-159-11	CERAMIC	0.1uF		50V
C313	1-164-159-11	CERAMIC	0.1uF		50V
C315	1-124-927-11	ELECT	4.7uF	20%	100V
C341	1-126-786-11	ELECT	47uF	20%	16V
C351	1-124-120-11	ELECT	220uF	20%	25V
C352	1-136-165-00	FILM	0.1uF	5%	50V
C353	1-137-436-11	FILM	0.0039uF	5%	50V
C354	1-137-436-11	FILM	0.0039uF	5%	50V
C355	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C356	1-137-438-11	FILM	0.0082uF	5%	50V
C357	1-124-925-11	ELECT	2.2uF	20%	100V
C358	1-137-438-11	FILM	0.0082uF	5%	50V
C371	1-126-768-11	ELECT	2200uF	20%	16V
C372	1-164-159-11	CERAMIC	0.1uF		50V
C373	1-124-927-11	ELECT	4.7uF	20%	100V
C374	1-124-925-11	ELECT	2.2uF	20%	100V
C375	1-124-903-11	ELECT	1uF	20%	50V
C376	1-126-791-11	ELECT	10uF	20%	35V
C377	1-124-925-11	ELECT	2.2uF	20%	100V
		< CONNECTOR >			
* CN301	1-564-507-11	PLUG, CONNECTOR 4P			
* CN302	1-564-508-11	PLUG, CONNECTOR 5P			
* CN304	1-564-505-11	PLUG, CONNECTOR 2P			
* CN305	1-564-506-11	PLUG, CONNECTOR 3P			
* CN306	1-564-509-11	PLUG, CONNECTOR 6P			
* CN307	1-564-505-11	PLUG, CONNECTOR 2P			
* CN308	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
* CN311	1-560-060-00	PIN, CONNECTOR 2P			
* CN312	1-560-061-00	PIN, CONNECTOR 3P			
		< DIODE >			
D301	8-719-200-82	DIODE 11ES2			
D302	8-719-200-82	DIODE 11ES2			
D316	8-719-987-63	DIODE 1N4148M			
D341	8-719-987-63	DIODE 1N4148M			
D371	8-719-987-63	DIODE 1N4148M			
D372	8-719-987-63	DIODE 1N4148M			
D374	8-719-987-63	DIODE 1N4148M			
D375	8-719-987-63	DIODE 1N4148M			
D376	8-719-987-63	DIODE 1N4148M			
D384	8-719-987-63	DIODE 1N4148M			
D385	8-719-987-63	DIODE 1N4148M			

Ref.No.	Part No.	Description			Remark
		< IC >			
IC101	8-759-111-44	IC uPC4570C-1			
IC102	8-759-111-44	IC uPC4570C-1			
IC103	8-759-098-73	IC HA12172NT			
IC301	8-759-071-48	IC TA7807S			
IC302	8-759-604-95	IC M5F79M07L			
IC304	8-759-240-81	IC TC4081BP			
		< COIL >			
L151	1-410-780-11	INDUCTOR 27mH			
L251	1-410-780-11	INDUCTOR 27mH			
L352	1-408-989-21	INDUCTOR 470uH			
		< TRANSISTOR >			
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q352	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q353	8-729-194-57	TRANSISTOR 2SC945-P			
Q354	8-729-194-57	TRANSISTOR 2SC945-P			
Q355	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q371	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q372	8-729-900-89	TRANSISTOR DTC144ES			
Q373	8-729-900-65	TRANSISTOR DTA144ES			
Q374	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q375	8-729-900-89	TRANSISTOR DTC144ES			
Q376	8-729-900-89	TRANSISTOR DTC144ES			
Q377	8-729-900-65	TRANSISTOR DTA144ES			
Q378	8-729-900-89	TRANSISTOR DTC144ES			
Q379	8-729-900-89	TRANSISTOR DTC144ES			
Q380	8-729-900-89	TRANSISTOR DTC144ES			
		< RESISTOR >			
R101	1-247-889-00	CARBON	270K	5% 1/4W	
R102	1-249-404-00	CARBON	82	5% 1/4W	
R103	1-247-882-11	CARBON	130K	5% 1/4W	
R104	1-249-426-11	CARBON	5.6K	5% 1/4W	
R111	1-247-889-00	CARBON	270K	5% 1/4W	
R112	1-249-404-00	CARBON	82	5% 1/4W	
R113	1-247-882-11	CARBON	130K	5% 1/4W	
R114	1-249-426-11	CARBON	5.6K	5% 1/4W	
R120	1-249-425-11	CARBON	4.7K	5% 1/4W	F
R121	1-249-429-11	CARBON	10K	5% 1/4W	
R122	1-249-431-11	CARBON	15K	5% 1/4W	
R123	1-249-429-11	CARBON	10K	5% 1/4W	
R124	1-249-421-11	CARBON	2.2K	5% 1/4W	F
R125	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R126	1-247-840-00	CARBON	2.4K	5% 1/4W	

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Ref. No.	Part No.	Description				Remark
R127	1-249-433-11	CARBON	22K	5%	1/4W	
R128	1-249-429-11	CARBON	10K	5%	1/4W	
R151	1-249-430-11	CARBON	12K	5%	1/4W	
R201	1-247-889-00	CARBON	270K	5%	1/4W	
R202	1-249-404-00	CARBON	82	5%	1/4W	
R203	1-247-882-11	CARBON	130K	5%	1/4W	
R204	1-249-426-11	CARBON	5.6K	5%	1/4W	
R211	1-247-889-00	CARBON	270K	5%	1/4W	
R212	1-249-404-00	CARBON	82	5%	1/4W	
R213	1-247-882-11	CARBON	130K	5%	1/4W	
R214	1-249-426-11	CARBON	5.6K	5%	1/4W	
R220	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R221	1-249-429-11	CARBON	10K	5%	1/4W	
R222	1-249-431-11	CARBON	15K	5%	1/4W	
R223	1-249-429-11	CARBON	10K	5%	1/4W	
R224	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R225	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R226	1-247-840-00	CARBON	2.4K	5%	1/4W	
R227	1-249-433-11	CARBON	22K	5%	1/4W	
R228	1-249-429-11	CARBON	10K	5%	1/4W	
R251	1-249-430-11	CARBON	12K	5%	1/4W	
R300	1-249-405-11	CARBON	100	5%	1/4W	F
R303	1-249-413-11	CARBON	470	5%	1/4W	F
R304	1-249-413-11	CARBON	470	5%	1/4W	F
R305	1-249-413-11	CARBON	470	5%	1/4W	F
R306	1-249-413-11	CARBON	470	5%	1/4W	F
R311	1-215-451-00	METAL	18K	1%	1/6W	
R312	1-249-440-11	CARBON	82K	5%	1/4W	
R313	1-249-433-11	CARBON	22K	5%	1/4W	
R317	1-249-433-11	CARBON	22K	5%	1/4W	
R318	1-249-436-11	CARBON	39K	5%	1/4W	
R319	1-249-436-11	CARBON	39K	5%	1/4W	
R321	1-247-864-11	CARBON	24K	5%	1/4W	
R322	1-249-436-11	CARBON	39K	5%	1/4W	
R352	1-249-429-11	CARBON	10K	5%	1/4W	
R353	1-249-434-11	CARBON	27K	5%	1/4W	
R354	1-249-434-11	CARBON	27K	5%	1/4W	
R355	1-249-393-11	CARBON	10	5%	1/4W	F
R371	1-249-426-11	CARBON	5.6K	5%	1/4W	
R372	1-249-442-11	CARBON	510	5%	1/4W	
R373	1-249-435-11	CARBON	33K	5%	1/4W	
R375	1-249-435-11	CARBON	33K	5%	1/4W	
R376	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R377	1-249-433-11	CARBON	22K	5%	1/4W	
R378	1-249-433-11	CARBON	22K	5%	1/4W	
R379	1-249-438-11	CARBON	56K	5%	1/4W	
R381	1-249-437-11	CARBON	47K	5%	1/4W	
R382	1-249-437-11	CARBON	47K	5%	1/4W	
R384	1-249-429-11	CARBON	10K	5%	1/4W	
R385	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R386	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R387	1-249-433-11	CARBON	22K	5%	1/4W	
R388	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R391	1-249-429-11	CARBON	10K	5%	1/4W	
R392	1-247-887-00	CARBON	220K	5%	1/4W	
R393	1-249-441-11	CARBON	100K	5%	1/4W	
R394	1-249-436-11	CARBON	39K	5%	1/4W	
R395	1-215-905-11	METAL OXIDE	10	5%	3W	F
R400	1-249-389-11	CARBON	4.7	5%	1/4W	F

< VARIABLE RESISTOR >

RV101	1-230-496-11	RES, ADJ, CARBON 10K
RV102	1-230-496-11	RES, ADJ, CARBON 10K
RV103	1-230-496-11	RES, ADJ, CARBON 10K
RV151	1-230-499-11	RES, ADJ, CARBON 100K
RV201	1-230-496-11	RES, ADJ, CARBON 10K
RV202	1-230-496-11	RES, ADJ, CARBON 10K
RV203	1-230-496-11	RES, ADJ, CARBON 10K
RV251	1-230-499-11	RES, ADJ, CARBON 100K
RV371	1-230-495-11	RES, ADJ, CARBON 2.2K
RV372	1-230-495-11	RES, ADJ, CARBON 2.2K

< RELAY >

RY301	1-515-614-11	RELAY

< TRANSFORMER >

T301	1-433-349-11	TRANSFORMER, BIAS OSCILLATION

****

*	1-646-433-11	TRANSFORMER BOARD

****

< CONNECTOR >

* CN701	1-564-512-11	PLUG, CONNECTOR 9P
* CN702	1-564-507-11	PLUG, CONNECTOR 4P

< DIODE >

D803	8-719-200-82	DIODE 11ES2
D804	8-719-200-82	DIODE 11ES2

< TRANSFORMER >

⚠T801	1-423-421-11	TRANSFORMER, POWER

****

MISCELLANEOUS

****

58	1-751-055-31	WIRE (FLAT TYPE) (37 CORE)
* 107	1-452-538-11	MAGNET

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
169	1-590-849-11	WIRE, FLAT TYPE (5 CORE)	
167	1-537-476-11	JUMPER, FILM (WITH TERMINAL)	
⚠ 201	8-848-144-11	DEVICE, OPTICAL KSS-240A	
202	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
HE1	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
HRP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
M1	X-3362-377-1	MOTOR (WH) ASSY	
M102	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
S701	1-572-713-11	SWITCH, PUSH (WITH CONNECTOR)	

****

ACCESSORIES & PACKING MATERIALS

****

*	3-376-136-01	CUSHION (HALF)
	4-937-945-01	PLATE (TRANSPORT), LOCK
*	4-941-548-01	LABEL, CLASS 1 (AEP, UK, E, IT)
*	4-956-904-01	CUSHION (AEP, IT)
*	4-957-502-01	INDIVIDUAL CARTON (AEP, IT)

****

****

HARDWARE LIST

****

#1	7-621-255-15	SCREW +P 2X3
#2	7-621-775-20	SCREW +B 2.6X5
#3	7-623-921-01	RING, RETAINING, CAPSTAN
#4	7-682-554-04	SCREW +B 3X25
#5	7-682-661-09	SCREW +PSW 4X8
#6	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT
#7	7-685-133-19	SCREW +P 2.6X6 TYPE2
#8	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
#9	7-685-135-19	SCREW +BTP 2.6X10 TYPE2 N-S
#10	7-685-136-19	SCREW +P 2.6X12 TYPE2 NON-SLIT
#11	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#12	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#13	7-688-001-01	W 2, SMALL

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

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HTC-D159

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	Ref.No.	Part No.	Description	Part No.	Description
39	312	3-358-232-01	SPRING (S-P F-R), TORSION	3-358-230-01 ☛	BELT (A1)

(RPC-95052)

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Consumer A&V Products Company
Home A&V Products Div.

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SONY

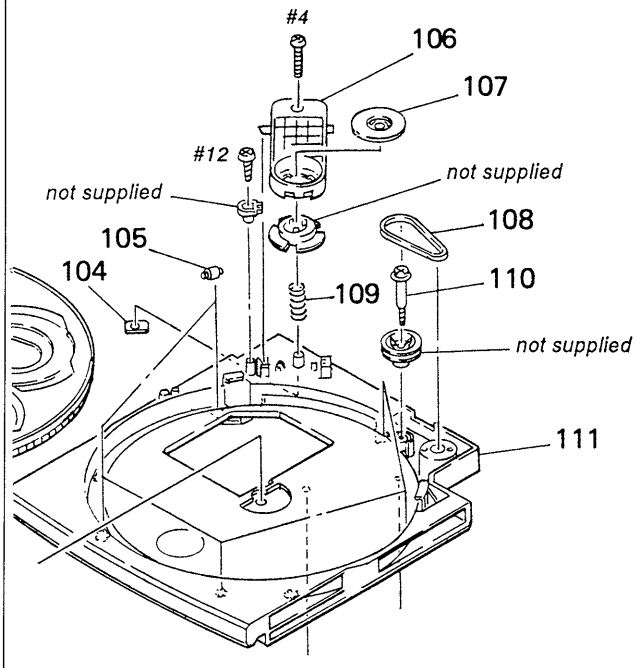
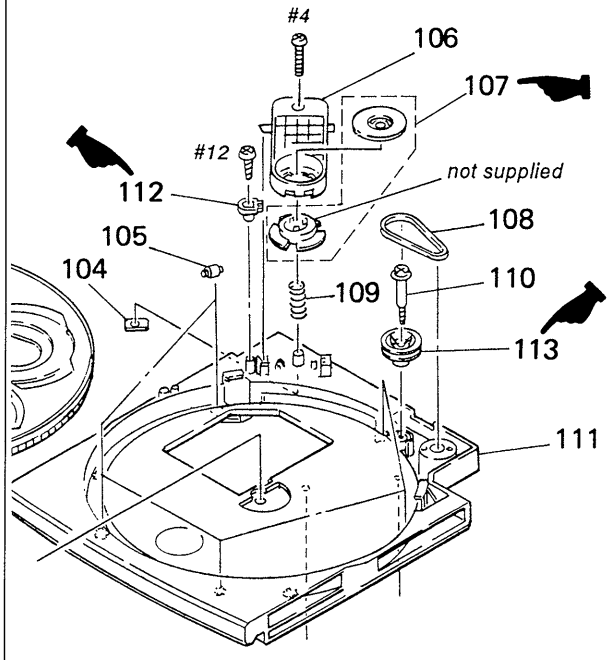
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

CORRECTION-2

Correct your service manual as shown below.

☛ : indicates corrected portion.

page	INCORRECT	CORRECT
35		
	Ref. No. Part No. Description _____ _____	Ref. No. Part No. Description * 112 4-949-226-01 PLATE, LOCK 113 4-934-380-01 PULLEY (R)

(RPC-96019)

9-957-726-92

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Home A&V Products Company

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